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USE YOUR HEAD

THE PRACTICAL USE OF
MEMORY AND SUGGESTION

BY
BRUNO FURST

Doctor Juris Bonnensis



FUNK & WAGNALLS COMPANY

NEW YORK AND LONDON

1939

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THE AUTHOR

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PART ONE

THE CULTIVATION OF MEMORY

CHAPTER I

THE GOAL AHEAD

You are reading this book because you wish to develop all the potentialities of your mind, to acquire greater mental power, an increased ability to concentrate, more self-confidence. You have found that your memory is not reliable and you want to improve it.

After teaching courses in memory retention for a number of years, I have discovered that its study, far from being a matter of drudgery, can be made not only unexpectedly interesting but as entertaining as a parlor game. In fact, many of the exercises which are given in the following chapters have proved to be successful as parlor games. But while I want you to enjoy your work in improving your memory, you must not overlook the fact that work is necessary if you are to get any real benefit from the instruction given you.

→ Too many people have a tendency to complain of faulty memory without attempting to do anything to improve it, looking upon it as a handicap which must be borne and cannot be improved. And yet the rapid improvement in the memory after even a short effort is as startling as it is rewarding, and the importance of a good memory is beyond calculation.

What is the memory and how does it function? This morning, as you were drowsily shaking off the stupor of deep sleep, some sort of recollection rose immediately to

the surface of your mind, a recent occurrence or some task to be performed during the day. In other words, at the very moment when your faculties became active, your memory began to function. To go a step further: *Every human activity rests in some way on memory.* It is logical to assume, therefore, that every piece of work can be accomplished more easily and more efficiently in direct proportion to the improvement in the functioning of the memory.

It isn't necessary to point out so obvious an example as the actor. His professional career depends almost entirely upon his memory and if that fails him he becomes unfit to perform. To a lesser degree memory plays an important role in the life of the average business man. The merchant who can call to mind immediately his wholesalers, customers, buying and selling prices, personnel and so forth is more efficient than the one who is uncertain about these factors in his business life, who makes mistakes because he cannot remember figures or information accurately, who wastes his own time and that of others in prodding a faulty memory or hunting for information which he should have had at his tongue's end.

Let us imagine there are two salesmen, one of whom has a good memory, the other a poor one. The former immediately remembers the buyer's name when he meets him; he recalls his family connections and personal hobbies and, as a result, is able to discuss them and break down the difficult first minutes of conversation and establish a personal contact with the buyer—an important result for the success of the business, as most good salesmen know. The man with the good memory has, of course, another advantage over the salesman with the poor memory. He is ready to give all the information that is required about his product

without delay or hesitation, and he can keep in mind far more sales arguments than the untrained man.

Now let's see how memory affects the professional man—the lawyer, for example. If you are fortunate enough never to have been involved in a law suit, you must at least have followed criminal or civil trials in the newspapers. But have you observed how often the outcome of a trial was decisively influenced by the fact that one of the lawyers could at the right moment refer the judge to a certain former ruling on a certain point of law? In such instances—in the midst of hearing the testimony of witnesses or the plea—there is no time to trundle out law books or commentaries, or to seek other decisions. The memory of the lawyer must not fail him.

In the well-known Hines case, which took place in New York in July and August, 1938, Mr. Stryker, the lawyer for the defense, brought the trial to a sudden and unexpected end after about four weeks of testimony. The District Attorney had posed a question which might be regarded as tending to bias the jury. Hines' attorney recalled at once certain important decisions bearing upon this point of law. A search for them in law books would have been impossible, for the motion on the question had to be proposed immediately. *His good memory enabled him to cite these decisions.* Judge Pecora could not disregard the fact that the cited decisions were pertinent, and therefore accepted the plea for a mistrial because of possible unfair influence on the jury. This is only one of thousands of cases in which the good memory of an attorney not only influenced the verdict in a trial but actually decided it.

But aside from the importance of memory in one's professional and business life, it is of more immediate interest in its effect on our daily, personal life. How many times a

day do you rack your brain for the name of a person which "is just on the tip of your tongue," or find yourself in the embarrassing position of introducing your best friend and finding his name has slipped your mind? Or perhaps you had a number of errands to perform and discovered when you got home that you had forgotten the most important of them. The exasperation, the duplication of effort and the needless annoyance resulting from so poorly functioning a memory are familiar to all.

Equally familiar is the remark which would have dazzled the company and which you remember only after you are home and alone, too late to be of any use. And of more serious consequence is the telling argument which might decide favorably a business problem, or land you a job, or effect an important result, but which slips your mind at the time when you most need it.

A poor memory, as the foregoing illustrations will show you, is more than a mere annoyance. It is a serious handicap, but one which, with perseverance and intelligent effort, can be overcome.

Every advance in civilization and every step in cultural progress rests in the last analysis upon memory. The Curies would never have discovered radium and the wonders of its potentialities if they had not kept in mind the radioactivity of all minerals containing uranium. So every step forward in human achievement, every step forward of the individual as well as of humanity in general, depends upon memory. Our cultural heritage would be impossible if we could not recall what our fathers and forefathers thought, developed, and brought to fulfillment.

"People always talk about the weather," said Mark Twain, "but nobody does anything about it." And that is true too of the memory. You know that to maintain your

health and general fitness for sports you must train your muscles, and consequently you go through your daily dozen or at least take extended walks to exercise your muscles and fill your lungs with oxygen. But you overlook entirely the fact that your memory is also a functioning part of you, and that it must be exercised and trained if it is to work in a satisfactory manner.

Of course, individuals differ widely in their inherent powers of memory, just as they do in other respects. But there are many instances that prove that even those least favored by nature can, through zeal and effort, overtake the gifted. There is no real excuse, therefore, for accepting a poor memory as something which must be endured.

During my school days I had a very bad memory. It was obvious to me that my classmates could retain facts longer and more accurately than I could, and for some time I accepted this as a natural and unchangeable situation, for young students are slow to learn that it is more important to retain facts in their mind than to continue to acquire further information which they aren't able to remember.

At the university I heard for the first time of courses in memory training and plunged into the subject with great enthusiasm. In a short time I was able to train my memory to such a point that it has never since failed me! And yet the methods by which my memory was trained were faulty and rather crude. These faults I recognized more and more clearly later on in training my own classes, and during the course of many years and through the experience of working with thousands who have attended my lectures I have gradually eradicated them.

While this memory course has been prepared with a view to making it as entertaining as possible, do not overlook the fact that the goal ahead is twofold: First of all, I want

to give you keys to memory training which you can apply to any situation. Second, I want to improve your memory and, in time, strengthen it to such an extent that you will need to resort to the keys to memory training only in the rarest cases.

The attainment of this goal is a cooperative undertaking in which your part is indispensable—and that consists in more than merely reading the chapters of this volume; it requires actual study on your part. But you will be encouraged to discover that you do not need to wait until the end of the book to develop a better functioning of your memory. After a few chapters you will be able to undertake experiments in memory retention that would now seem utterly impossible to you. When you have once made a beginning and learn that improvement in your memory is not only possible, that it is actually taking place, you will find a new pleasure and new inspiration in your work. For my own part, I shall endeavor to explain each step clearly as I go along. If, however, any point arises which is not clear to you, write to me in care of the publisher and I shall be glad to answer your questions.

There are several points that should be made clear in the beginning:

1. Wherever mention is made of experiments, it is not sufficient for you to read about them; you must actually try them out in practice.

Only practice will bring you any practical benefit. Doing a thing is of infinitely more value than merely reading about it. Your muscles, for instance, are not developed or strengthened by looking at the pictures of physical exercises or reading how to perform them. Only by carrying out the exercises yourself will they do you any good. The same is true with experiments in memory retention. Your powers

of memory will not be improved by reading about these experiments and then forgetting them; only if you attempt to do them yourself, and practise them, will they be of any worth to you. But, in compensation for the effort you put on these exercises, you will find that your interest and pleasure in doing them will steadily increase.

2. A man who goes to a prize fight must know the technique of boxing if he is to understand it. A man who wishes to improve his memory must know the technique that will develop it, a technique which we call mnemonics.

There are some rules for mnemonics which have been tried for several hundred years and found good, so that there is no reason for discarding them. Others serve special purposes and aims and their application depends on the requirements of the individual. Take as an analogy an engineer who is commissioned to build a bridge over a river. If he does not want his entire structure to collapse, he must adhere to the basic and time-proven fundamental principles of construction. But he may choose his ornamental designs to suit his own tastes.

When these individual instances arise I will point out where it is advisable to make use of one set of rules and where to follow the other.

3. Do not make any experiments in mnemonics when your brain is tired. While the human memory-capacity can be exercised and trained, the ability to absorb new facts has its limits, beyond which it is pointless to press. Whenever you begin to feel tired, interrupt your study and take a little rest.

If you have worked during the day to the point of exhaustion be sure to take at least an hour of complete rest before you begin your memory training course. The fact that you are changing from one kind of work to another

will be a great help. A complete change in mental activity is less wearing on the mind than extensive preoccupation in the same field.

4. Do not overlook the importance of diet in relation to brain work. The mind should not be greatly exerted on an empty stomach nor on one overloaded. When your stomach is empty, the brain refuses to function; on the other hand, the processes of digestion and cerebration are incompatible. Therefore, after a heavy meal it is essential to take a rest period.

5. The best time for study will vary according to your occupation and daily schedule. If you are busy all day with your work, you will naturally study at night. Otherwise, where time is at your disposal, there is no categorical answer as to the "best time." It depends entirely on your habits and inclinations. Science has for some time acknowledged the fact that the mental receptivity of the individual at specific hours of the day differs as radically as the soundness of his sleep during various periods of slumber.

Some people fall into a deep, sound sleep in the early hours of the night, but sleep so lightly in the morning hours that they are awakened by the slightest noises. If you are one of these you are a morning worker who can easily accomplish in the mornings work that would call forth great efforts at night.

The contrary, of course, holds equally true. People who find it difficult to fall asleep at night but sleep so heavily in the morning that they must be awakened by cold water are the evening or night workers. If you belong to this group you probably catch up in the evening, in intellectual pursuits, the time you idle away in the forenoon.

Up to a certain point it is possible to train one's natural inclinations by habit and discipline, but for this purpose

it is unnecessary. Choose the hours which in your experience have proved to be most productive.

If you are parents of school children, this point is important in supervising their hours of study. It is often a mistake to force your son John to study his lessons at a particular time because his older brother or his friends study at that time. A knowledge of the psychological differences among individuals prevents many mistakes in disciplining children and also facilitates their learning processes.

6. Work as much as you can in the open air, instead of indoors, particularly if you must share a room with others. In working out some of the exercises which follow, it will help to be alone, or at least free from interruption. But whether you can be alone or not while you are studying, merely opening the window will be sufficient in providing fresh air so the brain may be stocked with new concepts and stirred to greater activity.

7. Repetition. The latest research findings in the domain of memory development have revealed that mere repetition in study is not so important as the time factor involved in the repetition. For instance, the research experiments of Professors Ebbinghaus, Duerr, Meumann, etc., have resulted in the following data:

The majority of experiments proved, as a general rule, that material which required 68 repetitions in one day could be mastered with only 38 repetitions if these were spread over three days. This proves, by the way, that the student who waits to the last day to "cram" would actually save half his time if he learned his subject gradually over a period of several days. The same is true for the adult. A subject which is hastily glanced over in one day can be retained for a longer period of time if a night is allowed to intervene before rereading.

The reason for this is that our memory, like all other functions of the consciousness, is not entirely inactive during the hours of sleep; it works on and on, in a more restricted sense, and for this reason impressions received on the previous day can impress themselves more deeply and register in the mind.

At some time or other you have probably worried desperately over some problem just before falling asleep, unable to find a solution. But on awakening the next morning, the solution was ready for you. Folklore about the brownies who do the work during the night which was left uncompleted the preceding day is no doubt based on the experience of the race that this "dream work" is an actual fact.

One of the most interesting and credible examples of this dream work manifesting itself, not only intellectually but physically as well, is told by the well-known French writer, Mme. d'Espérance, in her book, *In the Kingdom of the Shadows*, which purports to be an autobiography.

She relates that when she was a schoolgirl she had to write, as a lesson assignment, a theme on "What is Nature?" Writing themes was her weak point, and the assignment was particularly difficult for her. She postponed writing it from day to day until the evening before the day her composition was due. Still she could not write it. At last, she took her paper and pencil to bed with her and tried in despair to get on with her task. Finally, however, drowsiness overcame her and she fell asleep without having written a word.

In the morning she found, to her great surprise, many pages of written matter. The assignment was not only complete but the composition was far beyond her usual ability in content and style. She would have believed that the brownies did it if she herself, as well as the teacher to

whom she told the whole story, had not recognized the handwriting as undeniably her own.

The genuineness of the story we must leave to Mme. d'Espérance. But even though such a case is extremely rare, it is by no means unique. Such occurrences, moreover, furnish us with excellent proof of the matter in hand; namely, that the apperception, and with it the memory, of mankind is not entirely obliterated during sleep.

And now we look forward to the goal we have set ourselves. Through the application of the method and exercises which have been developed for you, you will discover—aside from the actual improvement of your memory—that you have acquired an increased ability to concentrate so that distraction of attention will no longer disturb you.

You will be able, too, to overcome inhibitions which have prevented you from being a good speaker, and you will develop an increased ability to influence the actions and decisions of those about you as well as to overcome your own inferiority complex.

Here, then, if you are willing to give the following pages earnest study, is a road leading to increased achievement, with unexpected entertainment along the way, and a good memory as the goal.

CHAPTER II

THE RUDIMENTS OF MEMORY

EVERY outstanding man in the field of sports has a trainer, whether he be boxer, swimmer, or distance runner. Every day, however, you can see in sports arenas young men who attempt to compete without the advice of a trainer or a manager. The winner, they would probably tell you, is merely the man whose legs work the fastest, and that is all there is to it; aside from this, there is little to know about foot racing. But every adult knows that this is faulty reasoning. Nurmi would never have been the runner par excellence without the help of good trainers. And why is this true? Because the trainer knows that racing is not merely a matter of putting one leg ahead of the other as fast as possible, but a matter of correct breathing, proper arm movement and posture, good pace and a dozen other details.

The trainer, in other words, has made a careful study of how the body functions *naturally* in running. He knows, consequently, in what respects it may fail to function and how such failure may be corrected.

To take another illustration: the invention of spectacles, opera glasses and the telescope was not possible until men had discovered how the human eye is constructed and how it functions in its natural state without the aid of glasses. Only with a complete understanding of the normal working of the eye would it be possible to correct vision, and

remedy the defects which cause near-sightedness or far-sightedness. When one knows how the eye functions normally it is then possible, and only then, to grind glasses which will correct its shortcomings.

We know, then, that before we can make any improvement we must first know how the body or the particular organ under consideration operates in its natural, normal state. And this applies with equal force to the memory. Our first step must be to learn why we remember some things and forget others. No doubt, you have paid little attention to this uncertain quality of your memory but it will pay you to get to the root of it now.

Call to mind the last walk you took (it may be your walk to and from the office) yesterday or today. Please try to give definite answers to the following questions—and I would like to repeat here that only by attempting to answer the questions and practise the exercises which are given you can you expect this book to be of practical benefit to you.

1. Did you meet any acquaintances?
2. Can you describe the clothing worn by these acquaintances?
3. Did you talk to anyone during your walk?
4. Did you pass many shop windows?
5. Can you remember any displays shown in these windows?

Do not pass over these questions in a casual fashion, but answer them as definitely as you can. When you have done so, go over your answers a second time. You will doubtless wonder: Why have I remembered this and that and why have I forgotten the other? It is a well-known fact that we always remember a part of what we have seen and heard and forget the greater part. This applies not only to the

walk which we have just tried to remember but to our whole lives—starting in childhood and school days. But it is possible that you are wondering for the first time why this should be so.

All external impressions are received by the brain and registered in the brain cells. Why does our brain arbitrarily retain some of these while it forgets others after a shorter or longer time? To be sure, the passage of time plays a certain role, but it is not, obviously, the determining factor. The questions listed above, dealing with the very recent past (today or yesterday), prove this, as the short intervening time could not have affected your replies.

You may say that you have forgotten much that you saw in the walk because you only glanced at it once. But repetition of observation is not in itself a determining factor in remembering. If you would like to check this statement, ask an acquaintance what the 6 on his watch looks like, the watch which he consults many times daily. You will discover that most people, in spite of frequent observation, do not know whether their watches have Arabic or Roman numerals on the dial. A large number of them are unaware, until you call their attention to it, of the fact that the 6 is usually missing from watches, because the second hand takes its place.

We see, therefore, that neither the passage of time nor repeated observation can in itself explain the differences in “remembering” and “forgetting.” The solution of the riddle is to be found in another phase of our minds.

Assume that we meet three friends who have just returned from a business trip together. One is a merchant, the second an architect, and the third a modiste. The three have visited a foreign city and have not parted company during the length of their stay. Therefore, the trio have

seen the same sights and received the same impressions. Yet what happens when we ask each in turn to tell us what he saw?

The merchant will talk about the shops and stores he saw, and probably will describe window displays accurately, or store fixtures and furnishings. The architect, on the other hand, will not refer to these things, but will devote a large part of his conversation to churches, monuments and public buildings. He will talk about Doric and Corinthian columns and give us an excellent description of this or that fine doorway. The modiste, however, will overlook the things which attracted the merchant's attention and pass over the things discussed by the architect. Instead, she will describe in detail the costumes she saw in some café, and she might even be able to tell us about certain oddities in hats which she observed but fleetingly on passing strangers.

No doubt, you anticipated this difference in the impressions brought back by the three travelers because such cases are common to the experience of all of us. Yet this illustration has brought us much closer to the heart of our problem. Each of the three travelers remembered the things which lay in his particular province, and we conclude, therefore, that human memory retains, from the countless impressions received during the day, only what touches on one's circle of interests. Whether one's interests are wide or restricted, whether they are great or petty, depends upon the individual and need not concern us. But the following conclusion is important:

As soon as a man's interest is aroused, he takes notice, that is, he turns his full attention to the object in question. This intensification of his attention we call concentration and we have discovered this principle: Careful observation and concentration lay the foundation for good memory,

and their application is easiest when the object of observation can be made interesting to the individual.

Turn back to the five questions regarding your last walk. I think you will find that your answers are in accordance with the principle just stated.

For instance, you remember only the things of most interest to you in the conversation of your friends, don't you? You listened to these things with greater attention and concentration because they were of greater interest than the rest of the conversation, which you have now forgotten. In the same way, you will find that you remember some articles of clothing which your friends wear because they either especially please or displease you, but that you forget the rest.

To go back to your walk, you retained in your memory only those window displays from the hundreds you passed and looked at that particularly interested you, whether you were thinking of making a purchase or merely window shopping.

Through these illustrations and the simple test which you have just made of your own memory, you have discovered the most important principles on which the retention and forgetfulness of the human mind are based. Now that we have seen how the normal memory functions, we are better able to correct the weaknesses which we find. We have a clearer idea of how to adjust the lever in order to lighten the load on our memories and to strengthen them so that they will function better both in quality and quantity or subject matter. Our three objectives are:

- ①. To heighten our attentiveness and powers of observation.
- ②. To increase our ability to concentrate.

3. To draw hitherto unnoticed matters into the circle of our interest.

Rathenau once said the most difficult part of any task is to set a definite goal. But if one has a clear picture of his goal in mind, it is not too difficult to lay a straight course to it. Our three objectives are definitely set before us. Now we shall lay our course to reach them.

CHAPTER III

INDIVIDUAL METHODS OF OBSERVATION

ONE day the students in Privy Councilor von Liszt's seminar in criminal law were startled when two students suddenly became embroiled in an argument which disrupted the sleepy quiet of the room, and rapidly developed into a violent quarrel, coming to blows. Before the horrified eyes of the students one of the two drew a revolver from his pocket and shot his opponent.

Abruptly von Liszt turned to the students and asked them to write down an account of the incident. The encounter, of course, had been prearranged by von Liszt and played in accordance with his instructions. Aside from the two participants, none of those present was aware that the scene was not spontaneous.

In spite of the fact that the whole incident had occurred before the very eyes of young men startled into keen attention, almost all of the accounts of the scene were incomplete or incorrect.

What von Liszt wanted to prove through this experiment, and did prove, was the fact that most people have remarkably poor powers of observation. He had a second purpose in mind, as well, which was to point out that it is necessary to take extraordinary care in describing actual occurrences. Day after day witnesses on oath testify to events which they have seen at first hand, describing them according to their best knowledge; and times without number this

testimony is false, because it rested on powers of observation which proved themselves, on cross-examination, to be unreliable.

Many judges who are not well-versed in psychology often overlook this point and are inclined to base their verdicts on such testimony, especially when it is given under oath. It seldom happens that the faulty powers of observation in a witness are proved in the courtroom itself. But here is a case in point:

In several countries, for instance in Germany, it is possible to appeal the decision and carry a criminal case through the courts a second time with the same witnesses, etc., repeating the procedure of the first trial before a different judge. In a criminal case of this sort, which was tried in the Court of Appeals, therefore for the second time, I was acting as counsel for the defense. The witness for the prosecution, on whose testimony the verdict was largely based in the first trial, had, according to her own assertions, caught but a hasty glimpse of the defendant at the scene of the crime, but she insisted emphatically that she could identify him. The accused categorically declared his innocence. The judge was inclined, like his predecessor in the first trial, to believe her sworn testimony.

When I asked her if her memory for faces was always so reliable that she could unfailingly depend upon it, she unhesitatingly answered in the affirmative. Now this witness had been the last to be interrogated in the second trial as well as in the first. Consequently the other witnesses in the case were already in the courtroom. But for several reasons, inconsequential to the present discussion, certain witnesses had been called in the second trial who had not been present at the first.

Immediately after the eye-witness in question had ex-

told her good memory for faces, I called on her to look at the witnesses in the room and, relying on her allegedly good memory, to tell *which persons she had seen at the first trial and which she had not seen there*. The answer to my challenge was so calamitously wrong that even the prosecuting attorney could no longer deny the possibility of error on the part of the witness in recognizing the defendant. The case was dismissed, due to the fact that we had demonstrated *the faulty powers of observation* of a witness before the court, although this witness had so highly praised her good powers of observation. This incident will suffice as proof of man's weak apperceptive ability and his poor powers of observation.

Aristotle, one of the wisest men who ever lived, asserted that the common house fly has four legs! This in itself would not be of much importance, but the statement was repeated in textbook after textbook up to the middle of the last century, in spite of the fact that it is really not difficult to see and prove that the common house fly has six legs.

But it is not enough merely to confirm the fact that powers of observation are faulty. It is more to the point to find ways and means of correcting them. In order to do this, we must recognize the importance of the *five senses*. On them depend our powers of perception. Our memories can retain only those impressions which have been made on our minds through the senses of sight, hearing, smell, taste or feeling. Of these five senses, *sight and hearing* play immeasurably greater roles than the other three.

The difference between the various brands of cigarettes or vintages of wine lies solely in *taste*. If we did not retain a memory of their special flavors, it would be impossible for us to make a distinction between the various brands,

and the cigarette manufacturers as well as the wine dealers might as well stop advertising specific brands.

It is *sight and hearing*, however, which play the most important part in daily life. Let us look at these two senses for a moment in order to determine which of the two is the more important.

No doubt you have personal acquaintances who, years after they have left school, can still remember exactly where in their schoolbooks a certain passage is located. By that I mean that they can distinctly remember that the Battle of Marathon is at the bottom of a left-hand page, while the Fall of Rome is about in the middle of a right-hand page. These same people usually remember very little of the lectures they attended unless they took down copious notes. When studying a foreign language they do not learn much from hearing the words spoken; they need to write down the words themselves or at least to see them written or printed. These people depend upon eye impressions. They are the visual, or eye-minded type.

In contradistinction to them are those people who retain the gist of a lecture they have heard far better than the substance of a book they have read. Years later they can recall the very words used by their teacher or professor on a given topic, long after the impression of the printed page has vanished. When these people call absent friends or acquaintances to mind, it is the timbre of their voices rather than their outward appearance that they clearly and reliably recall. We call these people, whose memory is based on hearing, the acoustical, or ear-minded type.

Great musicians obviously belong to this type, while great painters, of course, belong to the eye-minded type.

Modern psychology recognizes a third type besides these two basic types—the motor-minded. But it is sufficient for

our purposes to restate the fact that schools and colleges have failed in training both of the basic types. If we were logical and sensible we would classify all high-school pupils, or at least all college students, according to their types of memory, and urge them to plan their courses of study accordingly.

Of what value is a true knowledge of and differentiation between the eye-minded and the ear-minded types? The answer is: The acutely ear-minded student cannot do better than choose lecture courses, since what he hears makes the deepest impression on his memory. Furthermore, he should not take too many notes but confine himself to cue words. Attending lectures is without doubt more beneficial for him, as well as more time-saving, than studying from a book. The opposite, of course, holds true for the eye-minded. By reading, he can master his lessons in a fraction of the time that his attendance at lectures would consume. These are elementary matters that would result in a great reduction of time for the entire course of study, and up to now far too little attention has been paid to them.

To what type do you belong? It must be understood that no one is 100 per cent ear-minded or 100 per cent eye-minded. Nevertheless, either one or the other type of memory is sufficiently predominant in the individual to classify him definitely.

If, after reading the foregoing paragraphs, you are undecided about the type to which you belong, or you wish to classify your friends or children, try the following test:

Write down ten different words and then read them aloud to the person you are testing. He is to write down a different word suggested by each word you dictate. He should not make any special effort but should merely write

down the first word that comes into his head after hearing your word dictated.

Now take his list of words and compare them with your list, which you read aloud to him. You will find that the eye-minded person has written down words that resemble yours visually, while the ear-minded person has written down words that have a tonal relationship with yours.

For instance, if you have read "wall," the eye-minded person writes down such words as picture, room, curtain, door, etc. But the ear-minded person writes ball, call, mall, or the like.

If you have read "sun," the eye-minded individual writes heavens, moon, stars, light, etc.; the ear-minded, run, fun, ton, etc.

Naturally, in a book on memory training it is not sufficient merely to determine the type to which we belong; it is essential to attempt at once to effect an improvement. As a matter of fact, all the senses of man can be developed with relatively little effort. You will discover this for yourself in regard to the powers of observation, if you will practise the exercises which I have arranged for you. But remember that you must practise these exercises faithfully and not merely read about them.

EXERCISES IN SIGHT TRAINING

1. Take from 6 to 10 sheets of paper of the same size. On the first sheet draw 6 parallel, perpendicular lines of equal length. On the second sheet draw 7; on the third 8, etc., always adding one line to the new sheet. Be sure, however, to keep the same amount of margins between the first and last lines and the edges of the paper on each sheet, so that the total area of parallel lines takes up the same

amount of space, regardless of their number. Then shuffle the sheets in a heap and take out one sheet after the other at random. At a glance tell how many lines are on each sheet. The errors that always are made in the beginning soon disappear with practice. But the point of the experiment is to do this exercise as quickly as possible and to recognize the number at a swift glance at the sheet.

2. After you have practised this exercise for a time you can extend it to the point where you can tell at a glance the number of windows in a house you have passed on your walk; or correctly estimate, at sight, the number of books in a strange library; or decide the size of an audience at a lecture by a quick survey of the hall. Of course, it is always necessary to choose only such experiments as can be checked for accuracy; for instance, the library of an acquaintance who knows exactly how many books he has, or who would willingly count them to prove your estimate.

3. Another exercise for training the eye, which, however, calls for considerably more effort, is the following: Hunt up a store window that has a good many items on display (not furniture, for the window would have room for only a few pieces). A window that has price tags on the articles is preferable. Look at the window display closely and carefully and take special note of any singularities. Then leave the window and find a quiet spot in the neighborhood and write down everything you saw in the window, sketching it if you can. If the individual articles had price tags on them, you should include them. Return to the window with your sheet of paper and compare what you have written with the actual articles, but do not correct what you have written during this comparison before the display. Rather, impress your errors on your mind and then make your correc-

tions on your sheet in the spot you originally found at a distance from the window. Then go back and compare your list with the window again and, if necessary, correct it again as before. Do not be content until your list is correct in every detail.

Test yourself frequently in this way, with many different window displays, and you will soon have the satisfaction of finding that your mistakes in memory grow fewer and of less importance.

If you find it too difficult at first to remember the contents of a window display, start with attempting to remember in detail the furnishings of a room.

There is a still simpler form of this exercise—a game which is excellent for developing quick powers of observation in children. Take ten or twelve small objects, such as a watch, pencil, purse, eraser, etc. Place these articles on a table and let the children look at them for a short while. Promise a small prize to the child who can tell or write down the largest number of objects he has viewed. Such a game spurs the children to competition, since they are naturally competitive, and try to surpass one another in order to win the prize. At the same time their powers of observation are being stimulated. But be sure to gauge the number and complexity of articles with respect to the age of the children.

3. The following experiment is useful in training yourself to quick observation: Draw a square enclosing 25 smaller squares, like a chessboard. In each square put down the numbers 1 to 25, or letters of the alphabet—but arrange them haphazardly, *not in sequence*. Do not look at this chessboard for a day or two. Then sit down to it again and number or letter the squares in their proper order. This exercise in itself presents no difficulties; it is a question of

ease and celerity. Therefore it is important for you to keep score of how many seconds it has taken you the first, second, third and succeeding times you have tried it. You can make the experiment more complex by numbering the chess squares with multiple digits or with two letters of the alphabet, or with a capital and a lower-case letter. Although such divergence in letters does not change them, it makes the game more difficult because it confuses the eye of the player.

EXERCISES IN HEARING

1. Seated at home or in your office, countless small noises reach your ears. Some of them are house noises heard through the walls or ceiling; others, street noises. Try to distinguish between these various sounds and be sure of what you heard in each instance. You must, of course, pay attention to details. It is not enough to know that you heard footsteps outside your door. From the sound and manner of the tread try to determine whose step it was.

2. Now go out on the street. The sounds which the ear catches are more numerous, more irregular; and above all, less familiar. As many sounds are heard at the same time it is not easy for the beginner to differentiate between them. But even here repeated practice will bring quick results. While it is wise, in the beginning, to choose unfrequented streets for this exercise, after a little while you will be able to go into busier thoroughfares, then to work your way into the center of town and into the thick of noises.

A similar exercise may be practised in the country, in the woods or fields. Here, too, there are constant small noises, the only difference being that here they are made by birds and small animals, instead of by automobiles, street cars and other noisy vehicles. The small sounds heard in the

open are familiar to the man who lives in the country, but the city man will have to orient himself a bit at the zoo or an aviary before he can tell one sound from another.

For this reason, however, it is wise for the city man and farmer alike not to confine their exercises to their own communities. Try to alternate between city and country so that you will be able to distinguish between these completely different kinds of noise.

Practise these exercises in eye and ear training faithfully for a while and you will notice a great improvement in your powers of observation. Things you previously overlooked or forgot you will observe clearly and remember.

Here is a rather amusing problem, the solution of which rests entirely on close attention to wording. Try to solve it for yourself before you read the correct solution. Later you may wish to try it on your friends:

Two volumes of a book are standing in correct order next to each other on a library shelf. Each volume is 3 inches thick, including front and back cover, which are each $\frac{1}{8}$ inch thick. A bookworm eats its way from Page 1, Volume I, to the last page of Volume II. How far has it traveled?

I have often used this problem in my classes and invariably get the answer $5 \frac{3}{4}$ inches. This of course is wrong. To solve it correctly, you must visualize the two volumes. They are standing in their correct order on the shelf. If you cannot visualize them, go to a bookcase and look at any two-volume book. You will see at once that Page 1 of Volume I and the last page of Volume II are on the inside; that is, the two pages are separated only by the front cover of Volume I and the back cover of Volume II. The correct answer, therefore, is $\frac{1}{8}$ inch plus $\frac{1}{8}$ inch, or $\frac{1}{4}$ inch.

If you put this question, simple as it is, to a circle of

friends, you will find out how few people can visualize the simplest matter, for instance the relative positions of the two volumes of a book.

Many leaders of industry are convinced that efficiency in their employees is often determined by their powers of observation. A furniture manufacturer who attended my lectures told me one day that it was his practice to give all applicants for positions tests in observation and perception. After asking the usual questions about training, experience and references, he tried the applicants out in some actual situation. For instance, if a load of lumber had just been delivered in the yard, he sent the applicant down to find out about it and report on it. If the latter returned with no further information than that the lumber was being delivered, he was considered unsuited to the job and sent away. The report which the applicant was expected to make ran somewhat as follows:

The shipment which is being unloaded is walnut from the Blank Company in C—, for which you placed an order. It is exceptionally fine wood. About two thirds of the shipment is unloaded and it will take an hour more to complete the job. The yard foreman is supervising the unloading. He gave orders to store the wood in Warehouse 3.

A report of this sort is comprehensive. It shows that the applicant was a close observer, and was resourceful in asking pertinent questions about points which did not come under his own observation.

This manufacturer declared emphatically—and I affirm it from personal experience—that a man's powers of observation are almost always indicative of his producing capacities.

CHAPTER IV

HOW TO REMEMBER FACES, PLACES, COLORS AND FORMS

UP TO THIS POINT we have studied only the functioning of the memory. Now let us turn to the various objects which we wish to remember.

When you are in a circle of intimate friends, turn the conversation on the subject of memory. You will be amazed at the conclusions drawn by the various individuals about their own memories.

One of them has no difficulty in recalling numbers, names and dates, but confesses he can never remember persons no matter how often he has seen or spoken to them. The next always remembers faces but can never recall names. One of those present—usually a man—says that he never loses his way in a neighborhood where he has once set foot, but that he cannot describe the architecture of a single building in it.

A woman, on the other hand, complains that she has no sense of direction and that she confuses the points of the compass. She even finds it difficult not to lose her way in localities which are quite familiar to her. And yet she can give her dressmaker a detailed description of a model of which she has had only a passing glimpse in a theater lobby.

Aside from these examples, you know from your own experience how variously the individual memory functions in learning a foreign language or in recalling melodies.

From the foregoing we may conclude that it is a mistake for people to speak in generalities about a "good" memory or a "poor" memory. The human memory is never completely good or completely poor. It is good or poor only in reference to particular material, and we must, therefore, make distinctions between a memory for faces, names, numbers, facts, and a memory for tunes, foreign languages, etc.

With this fact in mind, we come to the methods for improving the memory in each of these particular fields, for obviously the great differences in the cases call for wide differences in method.

For the present we will defer a discussion of numbers, names, dates and facts, because they can be dealt with more satisfactorily with the help of mnemotechnical aids, which will be considered in a later chapter. But a faulty memory for faces, places, forms and colors can be corrected in a natural, simple way, and the method which I propose will bring results in a short while.

HAVE YOU A GOOD MEMORY FOR FACES?

The lack of a reliable memory for faces is extremely annoying. A person whose memory for faces deserts him is often unpopular, for everyone is hurt at not being recognized. Not only will he be mortified and find himself in an awkward position, but he may even suffer financially as well.

The doctor, for instance, who fails to recognize a person on her second visit will perhaps lose her as a patient because she interprets his poor memory for faces as a lack of interest in her case. This is equally true of the merchant

who fails to recognize a customer who has patronized his store several times.

It is not altogether unreasonable for people to confuse a poor memory for faces with a lack of interest, for, as we have shown in the foregoing chapters, interest in a thing is one of the most important factors of memory. Nor is it a coincidence that many great men of history and literature were famous for their excellent memory for faces. That faculty, indeed, helps to explain how they attained their prominence.

It is said that Themistocles knew the 21,000 citizens of Athens by sight and by name. That this was no idle game of his is apparent when one realizes how important it would be in a little democratic city-state such as Athens for each individual citizen to know he was personally acknowledged and recognized on every occasion by the leading statesman.

A similar story is told about Napoleon. He is said to have known by name most of the soldiers in his army and to have been acquainted with their personal histories.

With the fine discernment of the literary artist, Schiller described the importance of a good memory for faces in the case of a statesman and general. In *The Death of Wallenstein*, Act III, Scene 15, Schiller points out in a dramatic way the value of a reliable memory:

WALLENSTEIN

(after scanning them briefly, to the Lance-Corporal)

I know thee well. Thou art from Bruges in Flanders:
Thy name is Mercy.

LANCE-CORPORAL

Henri Mercy, Prince.

USE YOUR HEAD

WALLENSTEIN

Upon the march thou wast cut off—surrounded
By Hessians; and fought'st thy way through them—
A hundred and eighty through a thousand men.

LANCE-CORPORAL

Such is the fact, General.

WALLENSTEIN

And what reward
Did'st thou receive for this most gallant deed?

LANCE-CORPORAL

The honor, General, that I requested—
To serve in this corps—in the Pappenheimers.

WALLENSTEIN

(turning to another cuirassier)
Thou wast among the volunteers I called for
At Altenburg to take the Swedish battery.

SECOND CUIRASSIER

It is so, General.

WALLENSTEIN

I ne'er forget
A man with whom I once have words exchanged. . . .
Now state your business with me.

LANCE-CORPORAL

(giving the word of command)
Shoulder arms!

WALLENSTEIN

(turning to a third cuirassier)
Thy name is Risbeck, and thy birthplace is Cologne.

THIRD CUIRASSIER

Yes, Risbeck of Cologne.

WALLENSTEIN

'Twas thou
That broughtest in the Swedish Colonel, Dubald,
A prisoner, to the camp at Nürnberg . . . No?

THIRD CUIRASSIER

It was not I, General.

WALLENSTEIN

Quite right! It was
Thine elder brother did it, and thou had'st
A younger brother also: Where is he?

THIRD CUIRASSIER

He is at Olmutz with the Kaiser's army.

In these few words Schiller has shown the overwhelming importance of a good memory for faces. And you yourself discover every day how important it is, both socially and professionally, to recognize at every meeting people whom you have once encountered, even though a rather long period of time may elapse between these meetings.

Now here is the method I advocate: Try to visualize in detail the appearance of one of your intimate friends. A blurred and generalized picture will not suffice. Try to recall distinctly the color of her hair and how she wears it, the color and "set" of her eyes, the shape of her eyebrows. What sort of nose and mouth has she? How are her ears set? What is the shape of her chin? How does her expression change when she smiles good-naturedly or when she laughs sardonically or sarcastically? How does she look

when something annoys her and how do her features change when she is emotionally upset? How tall is she? How does she walk and gesture? Are her arms and legs unusually long or short? What about her hands, fingers, nails? Can you recall the timbre of her voice? Such questions may be extended practically indefinitely, and you will find that the more questions you can answer, the clearer your mental image is.

Write down your answers to the foregoing questions and supplement them, if you can, with a little sketch of the person.

The next time you are with this friend, check your answers unobtrusively and notice particularly those features and characteristics about which you were in doubt or in error at your first attempt.

After you have taken leave of your friend, answer the questions again, but without referring to the sheet on which you wrote your answers the first time. It will probably be much easier this time, but if it is not, don't be discouraged; try it again after a third or even a fourth meeting.

This exercise, of course, should not be confined to one person but should be extended to a number of your friends and acquaintances.

If you practise this exercise daily for a few weeks, you will be greatly encouraged by the vast improvement in your powers of observation and your increased ability to see characteristics which previously entirely escaped your notice.

This sharpening of your powers of observation, moreover, automatically results in sharpening your memory for faces. After a relatively short time it will be impossible for you ever to forget a person whose features you have impressed upon your consciousness by this method.

HAVE YOU A GOOD MEMORY FOR PLACES?

From memory for faces we progress to memory for places and faulty orientation.

Can you find your way in a strange city with the help of a map, or retrace your steps over a particular route which you have been over only once? If you cannot, I recommend this method:

If you live in a large city, go to some part of town into which you seldom if ever venture. If you live in a small town or in the country, you can practise this exercise with best results when you are making a trip or go to another town. In any case, select a route, preferably irregular and circuitous, which will take you some twenty or thirty minutes to walk. As you go along, pay particular attention to landmarks, especially those on corners where you turn to right or to left. For instance, notice any striking house fronts, monuments, store windows, and the like. When you reach the end of your walk, try to recall every detail that you noticed on the way and retrace your steps in memory. If you can do so, make a little sketch showing the important landmarks on the way. Then try to retrace your steps in the opposite direction, mentally of course, using your landmarks as guides. If you cannot find your way back to your starting point, in spite of your memorized landmarks, repeat the exercise again and again until you know the way perfectly.

This exercise in orientation may seem difficult to you at first, but if you try it often, in different localities, you will ultimately succeed. Your eye and brain gradually accustom themselves to watching automatically for landmarks. After you have mastered this exercise you will find that even in a strange city you will not lose your sense of direc-

tion when following a route on a map. Your practised and sharpened sense of direction will not fail you, no matter how long a route you choose.

HAVE YOU A GOOD MEMORY FOR GEOGRAPHY?

Without consulting an atlas, sketch a rough outline map of North America. Remember that unless you actually work out these exercises this book cannot be of real assistance to you. While it is not necessary for your sketch to show odd conformations of the land, it should be a reasonably correct outline of the continent. When you have completed the rough outline, put in the following, in the order given:

New York City

San Francisco

Florida

The boundary between the United States and Canada

The boundary between the United States and Mexico

Lake Michigan

Chicago

Washington, D. C.

The Mississippi-Missouri River

Yellowstone National Park

When you have completed your map, compare it with an atlas to check your memory for geography. Find out to what extent it has failed you.

Now make a rough sketch of South America, again without referring to an atlas. Show the A B C countries (Argentina, Brazil, Chile) with their capitals. Then compare your map with the atlas and correct your mistakes.

If these exercises are too difficult, start by making

sketches of sections of the country with which you are familiar, which you have visited and know from your own experience.

Remember that the important thing about these exercises is not meticulous accuracy, but the ability to outline from memory, without reference to an atlas.

I can still remember my geography lessons in school. At that time map drawing was often assigned as home work and the best grade was given to the pupil whose map looked most like the one in the atlas, with the ocean colored an attractive blue and the mountains a pretty brown. My teacher, like many of his colleagues, had not the faintest knowledge of the psychology of memory. He did not know that a rough sketch done from memory and later compared with the atlas was of far greater value in impressing the outlines of a foreign country than the handsomest map copied, or even traced, from a book.

Don't make the same mistake in your study of geography or in teaching the subject to your children! The correct way to memorize the shape of a foreign country, its rivers, lakes, mountains, and cities is as follows:

1. Make a sketch map of the country from memory.
2. Compare your rough draft with the atlas and correct your mistakes.
3. Lay this map aside and make a new one, again from memory.
4. Compare it with the atlas and again correct your errors.
5. When this second (or third, or fourth, if need be) map meets with your approval, wait several days and then make a new one from memory.

If you do this exercise often enough, you will notice a great improvement in your memory for geography. You will

find yourself, in time, able to conjure up the appearance of any country or city when you hear its name spoken or see it in print, and you will take a more intelligent interest in geographical names when you encounter them.

HAVE YOU A GOOD MEMORY FOR COLORS?

Go to a picture gallery, look at any painting, and then, at home or in another part of the gallery, try to visualize all the details and colors of the picture. Again a rough sketch will be of aid to you. You need not have any artistic talent whatsoever to do this exercise. It isn't necessary to make a beautiful sketch. The essential thing is to discover how much your memory has retained of the details and, above all, of the colors of the painting which you selected.

Now, go back for another view of the painting, compare your sketch with the original, correct your mistakes, and repeat the process until your visualization and memory of color and details are absolutely correct.

You will doubtless meet with difficulties the first time you try this exercise. But it will encourage you to find that these difficulties will gradually disappear with practice and that your memory for colors, forms, and the like grows.

The following story serves to illustrate how a practised and trained memory functions in this capacity:

One of the most beautiful and valuable paintings in St. Peter's Church in Cologne was the Rubens altarpiece. It depicts the martyrdom of one of the apostles. In 1805 a French soldier stole the picture as a war trophy and took it to France. As the painting had been a great favorite, the people of Cologne were reluctant to hang a different picture in its place. Thereupon a painter in the city offered to

make a copy of it *from memory*, and the copy was hung in place of the original.

Many years later the original was returned by the French and the remarkable fact was discovered that the copy was so like the original, even in the smallest details, that one could hardly differentiate between them. Had the painter made his copy directly from the original he would have been considered merely a good copyist and the story would hold little interest. But he made it entirely from memory, after the original had been removed, and the incident serves as proof of what a trained memory for color and form can accomplish.

HAVE YOU A GOOD MEMORY FOR ARCHITECTURAL DETAIL?

Make a rough sketch of your own house front from memory, without going out to look at it. From memory sketch any striking building, such as a church or library, which you frequently pass.

Compare your sketches with the originals, correct your mistakes, and continue with the method outlined above for improving your memory of geography.

By this time you have enough examples so that you can continue independently with the development of memory for objects which are not dealt with here. Bear in mind, however, that so far we have considered only such simple subjects in memory training as can be mastered without the aid of mnemonics.

For more difficult subjects—numbers, names, dates, etc.—mnemotechnical aids are indispensable, and later on we shall see how even the most difficult things can be memorized and retained through mnemonics.

CHAPTER V

THE DEVELOPMENT OF CONCENTRATION

THE *memory has no enemy greater than lack of concentration.* To go back to the story of the three travelers who made a trip together and then told what they had seen on their journey, it is apparent that the things they recalled were those on which they had concentrated their attention. From the preceding chapters you have learned also that the ability to concentrate is important in every effort of memory. For instance, if, while you are reading a book on travel in the United States, you begin to think of trips you have made to Europe, you will remember little of what you read.

Unfortunately, the present-day emphasis on political crises, threats of war and sensational news is an enemy of concentration. It tends to develop nervousness and lack of concentration. The more taut the nerves become in the struggle for daily bread, security, even preservation of one's self and family, the more difficult it is to shake off the cares of daily life and concentrate on a certain subject.

The term "concentration" has become rather hackneyed through constant loose usage, and it has a more exact meaning than is commonly given it. Many people believe they are "concentrating" to a sufficient degree when they succeed in doing their jobs competently even when surrounded by distracting noises. That this is not true concentration is evident when one attempts any sort of rea-

sonably simple experiment demanding real, authentic concentration.

Americans as well as Europeans, we must confess, are greatly inferior in the art of concentration to Asiatics, especially Hindus. For hundreds of years Indian fakirs and yogis have practised concentration systematically, and they have passed their art along from generation to generation.

At this point I should like to cite as examples two stories from the countless numbers told by returning travelers. These stories are believed credible by so many people that we cannot doubt their authenticity.

The first is the so-called Magic Mango Tree:

For this performance the yogi lets the bystanders approach as closely as they please while he heaps a little mound of sand together before their eyes. Into this sand he puts a little seed which he has brought with him and covers the whole with a cloth. He then seats himself in the characteristic yogi pose and slowly waves his hand back and forth over the covered mound. After a short while the cloth begins to rise under the very eyes of the spectators and they see that the cloth is being lifted by a plant forcing its way up through the sand. As the cloth continues to rise, the yogi keeps up the monotonous waving of his hands and the plant grows to giant proportions. Soon the astonished spectators see an Indian mango tree whose size is described variously by the different observers, all of whom, nevertheless, agree that it towers over the person of the yogi.

The remarkable fact is that the tourists to India unanimously declare that the tree grew in so lifelike a manner before their eyes that no one could doubt its actual existence. And yet this audience was composed of tourists who had heard of the experiment long before they saw it and who knew that in reality there was no tree at all, merely

an optical illusion. In spite of this knowledge, however, the yogi's power of concentration could conjure up this "suggestion."

All sorts of attempts have been made to explain this phenomenon, but in vain. One theory, for instance, is that the yogi conceals somewhere about him little India-rubber plants of varying sizes. These unusual plants can, as a matter of fact, be pressed into so small a ball that they are scarcely larger than an egg. When a conjurer on the stage imitates this experiment, he hides little rubber plants of varying sizes under the cloth and produces them one after the other before the eyes of the spectators by clever manipulation.

Other conjurers use little mango trees whose branches have been hollowed out, rather like wood canals. In these canals they place young locusts and tie their hind legs to the branches with fibers of bast. When the conjurer sprinkles a fine powder into the canals, the locusts come out of hiding, but, because they are tied, they remain sitting on the little branches. As the wings of these locusts are deceptively similar to leaves, the little tree seems to the spectators to be rich in foliage.

These attempts to explain the phenomenon are useless, however, when the performer has no opportunity to conceal anything. They become pointless when one sees a photograph taken by one of the spectators. The incorruptible photographic plate shows no trace of a real tree in spite of the fact that the spectators were convinced and swore under oath that they had actually seen a tree. This difference between what the human eye believes to be true and what the plate discloses proves the experiment to be true hallucination.

Later on we shall discuss the origins of such hallucina-

tions. In the present connection it is sufficient to confirm the fact that extraordinary powers of concentration on the part of the yogi are necessary in performing the feat, for he is rarely in a position to bolster his experiment with explanations, since his American and European spectators understand his language as little as he understands theirs.

Another experiment calling for similar powers of concentration, also reported by many tourists in India, is *imperviousness to pain* and *living burial*.

Indian fakirs and yogis have the faculty of concentrating so firmly on the idea of absence of pain that they are able to pierce their tongues, cheeks and the muscles of their upper arms with long needles. At times they leave the needles in place for more than ten minutes and actually are unaware of pain, conducting the experiment with a quiet smile.

There are reports of living burials written by James Braid, Brunton, Wood, and Roesel, who can be rated as authorities on yogi practice and learning. One report tells this strange story:

Sir Claude Wade spent some time at the court of Runjeet Singh, where a fakir was buried alive for a period of six weeks. First the fakir seals his ears, his nostrils, and other orifices with wax. Then he holds his breath, concentrates, stills his heartbeats, and in a short while assumes the appearance of a dead man. He is next wrapped in a white linen shroud, laid in a casket and actually buried.

In the story told by Claude Wade the grave was in a square building with a door in each of the walls. Three of these doors were bricked up while the fourth was locked and sealed by Runjeet Singh, the quondam ruler. The entire surface of the building disclosed no opening through

which contact with the outside world could be effected or food passed in to the fakir.

At the awakening, which occurred after six weeks, in Claude Wade's presence, Runjeet Singh testified that his seal had not been tampered with. As an extra measure of precaution two details of his personal bodyguards had been stationed near the building for the full six weeks, with orders that four sentinels, relieved every two hours, should guard the building day and night to prevent any contact with the outer world. By his order, one of his highest dignitaries made unheralded inspections from time to time. He himself kept the seal and key, which had no duplicates, to unlock the single door.

When the six weeks had passed, Sunjeet Singh and Claude Wade were present. The seal was found intact and the door was opened, disclosing at first only a dark room in which the coffin stood in an upright position. The lid of the coffin was fastened with a padlock, likewise bearing the seal of Runjeet Singh. When the coffin was opened, a human form, wrapped in a white linen shroud, could be discerned. The yogi's servant took out the body and laid it against the wall in the same crouching position it had assumed in the coffin. Then the shroud was removed, and it was quite mildewed. The fakir's arms and legs were wrinkled and stiff and his head rested on one shoulder. He looked like a corpse. A doctor who had been called in to make an examination could feel no pulse in the region of the heart or the temples or the wrist. The head over the brain was warmer than the other parts of the body.

Then the servant began to pour hot water over the entire body and gradually straightened out the arms and legs from the crouching position they had assumed. He placed a paste of hot wheat on the crown of the head and started to rub

the limbs. Then he removed the wax which sealed the ears, nostrils, etc., and opened the mouth by prying the teeth apart with the tip of a knife. With one hand he held the jaws apart, and with the other he pulled the fakir's tongue forward, which at first fell back upon itself, completely obstructing the throat.

He rubbed the eyelids with oil for a few seconds before he could lift them. At first the eyes seemed immovable and glazed. When the paste had been applied to the crown of the head for the third time, the body started to twitch convulsively, the nostrils expanded and the limbs began to take their natural positions. The pulse was still scarcely discernible. On the tongue the servant put a little melted butter which was slowly swallowed. Shortly after this the eye-balls assumed their natural color and appearance and the fakir recovered his speech.

The entire procedure of disinterment, from the opening of the coffin to the recovery of speech, took about one half hour. All the spectators left the place firmly convinced that the precautions taken in this demonstration precluded trickery or fraud.

Again we assert that this experiment presupposes an extremely unusual degree of concentration and that such concentration must be practised for generations before it can yield results of this kind.

I have gone into some detail in describing these two cases in order to show how elementary our idea of "concentration" is when compared with what the Hindu means by the term.

While we obviously cannot hope to attain this sort of concentration, I think I can demonstrate that your ability to concentrate can be developed to a far greater degree than seems possible to you.

Later on, I shall show you how experiments in mind reading and thought transference are predicated on a certain kind of concentration easily attainable through a little drill.

If you would like to test your present ability to concentrate, try the following experiment (which I prophesy you will not yet be able to do):

From the circle of your friends choose someone with whom you are *en rapport*. Face each other across a table and lay a number of objects or playing cards (ten or fifteen will do) on the table between you and concentrate with all your will on one of the objects or cards. If your ability to concentrate is sufficiently great, you will succeed in getting your partner to name the object or card you have in mind. With the same degree of concentration, of course, you should be able to name the object which your partner has selected for the experiment.

To repeat, I do not expect you to be able to do these experiments now, but I am convinced that, *if you apply yourself to carrying out the exercises diligently*, you will be able to master them by the time you have finished reading this book.

As exercises in concentration I recommend the following:

1. Stretch out in a comfortable position on a couch or bed and be careful to relax your whole body, with no strain or tension anywhere. Close your eyes and try to *visualize the form* of some simple, familiar article. As soon as you succeed in doing so, concentrate your thoughts on this article to the exclusion of everything else and do not let them stray in any direction if you can help it. Suppose, for example, you choose an electric light bulb. You must keep

your mind on the bulb and not let it stray to the chandelier or the room it illuminates or the people in the room.

At first it will be difficult for you to sustain this experiment for longer than four or five seconds. But by gradual, regular drill, you will succeed in running the time of concentration up to ten seconds or longer. When you have learned to do this, make the experiment more difficult. Instead of the quiet room, select a more or less populous spot where you are unable to stretch out in a position conducive to concentration, and where, moreover, the impressions on eye and ear will make it more difficult for you to collect your thoughts.

2. A more difficult, and consequently more interesting, exercise in concentration consists in remembering as exactly as possible the occurrences of the hour immediately preceding this. It is not sufficient for you to recall only that you were on Broadway where you bought a book or had an ice-cream soda. The correct method of carrying out the experiment would be somewhat as follows:

"It is now eight o'clock. At seven I left my office on Forty-second Street and went to the subway station at Times Square. On the way the show window of X's store caught my eye because it contained a particularly good-looking suit. I stood in front of the window and figured whether my income and my expenses for the current month would let me buy the suit. The answer was No, because I had a rather large medical bill for a throat infection this month. But I noted the name of the store and decided that I could buy the suit next month.

"I then went down the subway stairs, changed a dime at the booth because I had no nickel, and waited several minutes for my train. During this time I thought about this matter and that which had kept me busy all afternoon and

about which I had not yet reached a decision. In the subway train I noticed two people sitting near me. One was a man who was sitting across from me. I noticed him because he wore a peculiar-looking tie. The other was a woman who resembled a relative of mine. During my ride I thought about a problem or two which worried me . . .”

If you carry out the exercise in this manner, you will make an important experiment in concentration: the more detailed, the better. That is, the more particulars you can recall, the more value the exercise will have for you. Of course, it is impossible for you to remember all the people you saw in the subway or all the thoughts that passed through your mind during the ride. But you will find that diligent, patient practice will increase your abilities.

It is important to remember that, aside from increasing your ability to concentrate, this exercise will in time make it possible for you to remember with a considerable degree of accuracy conversations which you have held and sensations which you have experienced. It is hardly necessary to point out how useful this can be in daily life.

And, finally, here is a third exercise which should appeal particularly to those of you who have lively imaginations:

Everyone occasionally falls into day-dreaming. There can be no objection to that, provided these day dreams do not interfere with more serious thinking. You can turn them into an interesting exercise in concentration if you make an attempt to recall your whole train of thought as exactly as possible. For example:

Mr. X is sitting on the beach in summer, enjoying the breeze. He sees a passing sailboat. It reminds him of the little sailboat his son received a few days before as a present from an aunt. He remembers he must buy another postcard for the aunt, and that he has just seen some espe-

cially attractive cards in a shop window. This reminds him that a road map was lying next to the cards with enticing tours in the neighborhood traced on it, and he muses that it really was too bad he had left his car at home because he could have made such pleasant trips in it.

Suppose that at this point Mr. X decided to do the above-mentioned exercise in concentration. He would try, starting with his car, to trace his entire train of thought backwards. That is, from the car to the road map, the post-cards, the aunt, his little boy and the toy sailboat, to the actual sailboat which started him off on his train of thought. Since reveries are apt to be rather long drawn out, tracing them backwards is often—especially at the beginning—quite difficult. But if a person practises it often enough he will make excellent headway and with very little effort not only strengthen his ability to concentrate, but his memory as well.

Why do so many people neglect their powers of concentration or make so little effort to improve them? The real explanation, probably, is that concentration is an abstract idea whose practice does not always show concrete results. For instance, if you are studying an instrument such as the violin, you notice after a few practice periods that your tone and phrasing improve. If you are studying a foreign language, you notice after a little while that you can read books in this language or even converse with others in it. But in studying concentration, no such immediate, noticeable results are evident. Its benefits are only indirectly evident in a greater ease of learning, greater capacity of remembering and greater control over your environment. But these are all things which cannot be measured by rule or weighed in a scale.

And yet the ability to concentrate is no less important.

We shall return to it again and again and you will discover that it is indispensable to the memory, to suggestion, to hypnosis and to mind reading.

But in the meantime let us consider the third essential factor in the efficient functioning of the memory—association of ideas.

CHAPTER VI

ASSOCIATION OF IDEAS

BEFORE I sat down to write this chapter I saw in the *Times* a map of Czechoslovakia showing the new boundaries drawn up by the delegates at the Munich meetings. In the same issue of the *Times* there was a news item stating that the French steamship company to which the *Normandie* belongs is laying plans to build a larger, faster giant ocean liner. This is to have a speed of from 34 to 36 knots an hour, and a capacity of 600 passengers each in the third and tourist classes, and from 700 to 750 passengers in the cabin class.

Look at both these news items from the standpoint of memory. How will you remember them? By *the simple process of relating the unknown to the known*.

First, we will consider the map. The new boundaries were to follow the language boundaries of Germany and Czechoslovakia. On all three sides of the old kingdom of Bohemia they were to run about parallel to the old boundaries. Obviously one could remember these new boundary lines easily if one knew the old boundary lines or had a clear idea of the language boundaries. In either instance, one could readily visualize the new boundaries and keep them in mind. Now, mark you, *the new facts are impressed on your memory through their association with facts already known*, either through association with the familiar old boundaries, to which the new are parallel, or through as-

sociation with the language boundaries with which you were acquainted.

Now let us look at the second dispatch, about the new leviathan. Because both the speed of about 35 knots and the capacity for carrying about 1900 passengers present a rather confused concept, we are apt to forget the whole thing sooner or later. But if we know that the *Normandie* does about 30 knots and can carry about 1500 passengers—or have any interest in it whatever—it is easy to note that the speed and capacity of the new liner will be about a third greater, and a vague concept immediately becomes clearer and makes a more forceful impression. Here again, *the new impresses itself on our minds through its association with the old.*

This statement applies to the entire work of memory. For example, consider just how you learn a foreign language. If you wish to learn that horse is *equus* in Latin, you have no recourse but to associate this hitherto unfamiliar word *equus* with the familiar concept horse. And it makes no difference whether you learn the word from a book or hear it spoken in conversation (in the latter case, with a Latin word, this is not apt to happen). *The necessity for associating the word with the familiar concept horse remains the same.*

You can observe this principle at work in every child who is learning to talk. The child is acquainted with the idea of doll long before he knows the name of it. Then when he hears the name *doll* he associates it with the familiar concept of his toy. It is for this reason that one must be so careful before children in the use of words.

Suppose you have a fox terrier. If you refer, before the child, to this pet as “fox terrier” instead of “dog” the child will form the wrong concept. That is, he will apply the

words fox terrier to all dogs that he sees, no matter what breed they are. Lack of attention to this matter will account for the fact that children so often have to unlearn what they have learned. That is, the child must form a generic notion of dog and then learn that fox terriers are only a certain breed of dog.

The work of memory in the child is in this respect similar to the work of memory in the adult, and we always find this rule holding true: *When a man learns anything new, no matter what the subject matter, it is always learned and remembered through association with familiar knowledge.*

But this confirmation of fact does not help us much. We must look further and try to classify our thoughts about the ways in which this association and relationship function. We cannot avoid this difficult task if we are to learn not merely how the memory works but how we can improve the functioning of our memories.

Returning to the items in the *Times*—the reports on the new ocean liner and the new boundaries of Czechoslovakia—after a few minutes' thought we realize that the associations have been effected in widely divergent ways.

In the case of the map, we had the old and the new boundaries before our eyes. From the preceding chapter we know that impressions received through the eye are called *visual impressions*. If we see that the new boundary lines are practically parallel to the old, it becomes a matter of visual representation, therefore a pictorial association of the new with the old.

In the case of the second example—the ocean liner—this possibility does not exist. Even a picture representing the proposed new liner as being larger than the *Normandie* would not give us an actually proven measure for its speed

or its passenger capacity. If we associate the figures, however, with the familiar figures of the *Normandie*, logic inclines us to form certain conclusions. That is, through experience we conclude that the larger liner will have a greater speed and a greater passenger capacity.

From these associational possibilities we establish this fact: *Whenever we undertake to learn something new, we can either associate it visually with familiar facts or relate it logically through pure reason.*

Of these two possibilities in association of ideas, the visual is by far the stronger, for most human beings remember events and other matters better when they have seen them happen before their very eyes than when they merely hear or read about them. That is why, in the study of physics, the pupils are called upon to make experiments themselves, because the teacher knows that *experiments seen make a deeper impression than experiments read.*

If you have taken pictures while making a trip, the entire excursion comes to life again through a perusal of your pictures. It makes no difference whether you have taken snapshots of the countryside or of persons. In either case the pictures themselves quickly and clearly call to mind the impressions of your journey. Every advertiser knows that a good ad calls for a picture. The psychological reason is always the same:

The pictorial always makes the best impression and a deep impression is always the aim and purpose of the advertiser.

If you want to bring home to your mind the boundary line between the United States and Mexico, a mental picture of the map is of far greater aid to the memory than an oral description which says that the boundary begins a little south of San Diego on the Pacific Ocean,

runs eastward to the Rio Grande, and follows the course of this river to the Gulf of Mexico.

And finally, the simplest of examples: If you have ever seen the Empire State Building or the George Washington Bridge, your memory will retain a clearer and surer picture of it than if you had read a whole array of descriptions of these two monumental structures.

Because pictorial impressions are the strongest, it is apparent that in memorizing and in remembering, in all that the memory retains, it is essential to make visual associations.

I should like to give you some examples of what I call visual associations:

Suppose we take the words "cat" and "fence." Since we are accustomed to seeing cats on a back fence, it is easy to imagine a cat running along a fence. If you take the words "flowers" and "lamp," there is no natural connection between the two, but it is not too difficult to imagine a lamp decorated with a flower design or that flowers are standing on a table lighted by a lamp. But if we take the words "checkerboard" and "thrush," we must have a lively imagination to form a suitable mental image of them. Perhaps the checkerboard is laid out in a garden over which a thrush is flying. Such mental images may often seem far-fetched. But a few such exercises convince one that it is precisely such unreal images that make deep impressions and are easily remembered because of their absurdity or oddity.

Notice that all these illustrations deal with the association of concrete objects. In other words, we have heretofore restricted ourselves to things we can see with our own eyes. This task becomes considerably more difficult when we undertake abstract ideas, that is, those that cannot be ap-

prehended visually. No matter how good your imagination, you cannot form a mental picture of the words "virtue" and "pride." If you attempt a mental picture of the two, you are restricted to substituting concrete images for the abstract. For instance, you may think of an angel instead of virtue, and teacher's pet instead of pride. But for your peace of mind, let me assure you that the necessity for forming abstract concepts rarely occurs in everyday life, except in listening to lectures or speeches. So we need not pay much attention or give much time to these exceptions.

Let us rather return to our investigation of concrete visual ideas. From the examples just quoted you can easily see that visual association implies imagination.

And here is something to think about.

As much as I have lectured on this subject and as many classes as I have taught in it, I have seldom met anyone who does not insist that he has an excellent imagination. In answer to the question: "Do you have a good imagination? Can you visualize things that really do not exist?" almost everyone says "Yes." As the imaginative powers of individuals vary greatly, such unanimity of opinion is rather startling. I think the reason for it is that there is scarcely a human characteristic so difficult of comparison as imagination.

Whether you are quicker at figures than your friend X is easy to determine, if you both add identical columns of figures. Whether you or your friend Y can speak French better is readily determined by a joint reading of a French newspaper or a conversation with a Frenchman.

In short, almost all of a man's characteristics and abilities can be compared with those of another man. One could always run a contest in them to determine them, as has been done in the case of stenography and typewriting.

But just try the same thing with the imagination! You will soon see that comparisons cannot be made, for no one can determine whether his own imagery is better, more artistic, and above all more plastic than that of another.

Of course, there are exceptions. No one will deny that Jules Verne was one of the most imaginatively gifted men who ever lived. He described not only airplanes but even submarines in definite terms at a time when the human mind was far from making any of the "dreams of the future" workable.

There is no doubt that authors who write utopian romances have rich imaginations. On the other hand, it does not follow that people who do not or cannot write such romances have poor imaginations. We can only estimate the quality of a person's imagination, however, if he has given us concrete evidence of it. And as this is not often possible, it is safe to say that: It is impossible to make comparisons in the faculty of imagination—barring a very few exceptions—and it is not a simple matter to determine whether a person has a good imagination or not. Mnemonics alone can decide it, and we will take up that subject later.

In developing the memory, a "vivid imagination" is a very desirable acquisition. I consider it necessary to state this axiom emphatically because we generally ascribe an "imaginative nature" to the person who is completely wrapped up in day dreams and accomplishes nothing in life. Now, while a man who lives only in his dream world cannot measure up to the realities and exigencies of life, on the other hand it is good for a person occasionally, but not for too long a time, to surrender himself to day dreams. It is a psychological truism, generally acknowledged since

the days of Coué and Baudouin, that every concept in the human brain works toward its own fruition.

For instance, an employee in a company imagines that the business belongs to him and that he is the head of the firm. This goal seems worth working for, else it would not figure in his imagination. But when he comes to think of minor details connected with this "castle in the air," he begins to consider how he would run the business, what changes he would make, what he would expect of his employees and the like. This last thought strikes rather close to home. Is he, as an employee, fulfilling the duties he would as head of the house demand of his employees? Meditation of this sort can yield very practical results, for he may make important changes in his routine.

Thinking about how he would conduct the business may lead him to discover improvements which need not remain imaginary but may be put into practice and made to pay. He can pass along these discoveries, which are largely the product of his imagination, to his superior, and there is always the possibility that he will be promoted more rapidly.

We can assert quite generally that people lacking in imagination fail to get ahead in the world because they do not have the ability to picture themselves climbing the ladder of success. But imagination is equally necessary for the proper functioning of our memories. And this is the reason why I have been so explicit in discussing it.

To the question I am frequently called on to answer—whether it is possible to improve and cultivate the imagination—I should answer Yes. The exercises which I suggested for sharpening the powers of observation are suitable for stimulating the imagination when the matter under consideration is one of recalling observed happenings. The

reproduction of pictures seen, architectural details, etc., also sharpens the imagination since it is always necessary to visualize what one has seen before one can reproduce it.

Here is an even better exercise: Imagine that certain historical events or personal experiences for some important reason or other had been altered in their course.

That sounds rather theoretical, but in reality it is quite simple. For instance, think of the Munich Conference of the four world powers, Germany, France, England and Italy, at which Czechoslovakia was dismembered, and ask yourself what would have happened if the first president of the country, Masaryk, had been alive. You call to mind the personality of the man, who died the year before, and try to picture in your imagination what would have happened in world affairs had he lived two years longer. An experiment of this kind, of course, calls for a rather wide knowledge of history and world personalities. Naturally, it is always simpler to choose personal experiences and make yourself the center of your conjectures.

Say you recently had a business conference which did not turn out to your liking. Now imagine that the result was as you wished it and picture to yourself, as graphically as you can, what you would have gained personally or professionally. Such an exercise will not only develop your imagination but also help you to think of arguments that you can put up successfully at a similar conference in the future.

In the final analysis, however, the cultivation of the imagination should serve to make visual association of ideas easier. We know, naturally, that our memory, even without special aid, retains visual associations best and longest. Later we shall see what valuable services mnemotechny renders to such associations of ideas.

CHAPTER VII

ASSOCIATION OF IDEAS WITHOUT VISUAL IMAGES

WE HAVE SEEN that the pictorial association of ideas fails when it comes to abstract ideas. Of course, it fails grievously when it is no longer a question of nouns but of qualifying adjectives. The concepts "hot" and "eager" can be expressed visually only indirectly through nouns to which they are related so closely that to recall the one is to recall the other. We must, therefore, have various methods of connecting ideas to choose from, and we want, above all, to take into consideration those persons whose imaginations are unable to make mental pictures of thought-connections. The advantage of mastering a variety of methods of making connecting links between mental concepts is obvious.

Whenever you hear the name Columbus, you immediately think of the discovery of America; and when you hear of the discovery of America you think of Columbus. The same thing holds true when you hear the date 1492, for all three concepts are so closely connected in the minds of educated Americans that recalling one immediately recalls the others.

When conversation turns on President Roosevelt, most people immediately think of the New Deal, and again the reverse of this holds true. When you hear the words St. Helena you immediately think of Napoleon, and when the

Declaration of Independence is mentioned, of Thomas Jefferson.

From these examples it is apparent that there are concepts which are so closely connected (that is, associated in our minds) that one habitually calls forth the other. Even the ancients recognized the importance of such connections for every sort of memory. Aristotle laid down four fundamental laws applying to thought-association. They are:

1. Likeness (similarity)
2. Contrast
3. Contiguity in space
4. Contiguity in time

We call these connections association-laws. What is meant by association-laws can be explained by a simple example:

The connection between the Cunard liner *Queen Mary* and the steamship *Queen Elizabeth* now under construction is *likeness-association* because both belong to the same steamship company, both are fast luxury-liners, and both are named for British queens.

The association between the *Queen Mary* and any freighter is *contrast-association* since no greater antithesis can be imagined than the mighty passenger steamer and a little cargo boat carrying coal or the like.

When the path of the *Queen Mary* crosses that of the *Normandie* the association is through *contiguity in space* since they are both in approximately the same spot on the ocean; that they are not actually contiguous is naturally beside the point.

When the *Normandie* leaves New York at the same time that the *Queen Mary* leaves Southampton, the association is through *contiguity in time*. If for some reason or other

the sailing time of one of the two ships should be remembered, the sailing time of the other—which, of course, would have to be known beforehand—would furnish a check. Perfect coincidence of time is naturally as unnecessary as “actual contiguity.” It is sufficient for the application of association-laws if the time of sailing is approximately the same for both liners.

Modern psychology and philosophy have extended these ideas in certain respects and narrowed them in others, but we can disregard fine theoretical distinctions because this book has been written for practical use and for the practical work of the mind.

Books of modern times dealing with association-laws, for instance those by Loiset and Poehlmann, are divided as follows in respect to the differences in concepts from a purely practical point of view:

1. Synonyms. Words of similar meaning, such as *lady*, *woman*, *wife* or *zealous*, *eager*, *industrious*.

2. Similarity of sound. Words which may rime, but not necessarily, such as *wall*, *fall*, *call*, *mall*, *ball*, *pall*, or *haste* and *taste*, or *Carolina* and *Evalina*.

3. The whole and a part. For instance, *man* and *eye*, *room* and *chair*, *book* and *page*.

4. Things of the same species. For instance, *rose* and *carnation* (both are flowers), *cannon* and *bomb* (both are offensive weapons), *chair* and *table* (both are furniture).

When this association-law should be employed we think: “Both are . . .”

5. Species and kind. For instance, *human being* and *Indian*. Every Indian is a human being, but not every human being is an Indian. *Furniture* and *table*; every table is a piece of furniture but not every piece of furniture is

a table. *Weapon* and *pistol*; every pistol is a weapon, but not every weapon is a pistol.

6. Cause and effect. For instance, *alcohol* and *drunkenness*. Drinking alcohol leads to drunkenness. *Sun* and *heat*; the sun radiates heat. *Murder* and *retribution*; committing murder is the cause of retribution.

7. Contrasts. For instance, *man* and *wife*, *light* and *dark*, *industrious* and *lazy*, etc.

8. Matching pairs. For instance, *penholder* and *penpoint*, *student* and *book*, *wall* and *picture*, etc.

9. Subject and quality. For instance, *sun* and *hot*, *stone* and *heavy*, *grandfather* and *old*. Under this association-law we relate persons or things with qualities which are peculiarly their own.

It is obvious that this compilation can be extended, but the cited examples are sufficient for practical purposes. But there is one more association-law which should be added because it plays an important part in everyday life and especially because I have found it eminently helpful in memorizing facts. It is this:

10. The accidental association of a concept, which can be either objective or subjective.

The association is objective in the case of all historical events, notably in the examples I quoted at the beginning of this chapter—Napoleon and St. Helena, Columbus and the discovery of America.

Had Napoleon fallen in the Battle of Waterloo, he would never have gone to St. Helena and no association between the two concepts could be made. But since he was exiled to this lonely island, and since every educated person knows about this exile of his, so close an association exists between the two concepts that the thought of one always calls forth thought of the other. The same thing

happens in the case of Columbus and the discovery of America. So here we are concerned with accidental associations that are objective; that is, those that are valid for everyone, not only for the readers of this book.

Now let us take this example: If your suitcase were stolen in the San Francisco railroad station, you personally would form an association between the two concepts *suitcase* and *San Francisco railroad station*. The thought of one would call to mind the thought of the other, but this association would hold true only for you and would not exist for others.

Enough of theory. For the application of these association-laws, as you will see, is not a theoretical matter at all, but an eminently practical one. To prove my point, I present a great array of concepts, to which we shall apply association-laws by joint effort. But, for your own sake, *use the association-laws I suggest only after you have tried to find the suitable ones yourself*. It is often doubtful which law to apply. *Man and wife* can be considered under "matching pairs" as well as under "contrasts." Which one is the better depends upon the context in which these words appear. So it is not absolutely necessary for you to choose the association-law I myself choose. However, it is necessary for you to choose the law that actually suits the two words. You will soon see why.

We begin with school and child and easily find the association-law of "matching pairs." Then take child and memory. "The whole and a part" suits this idea best, because memory is, of course, a function of the brain. Memory and mnemotechny: "cause and effect," for mnemotechny helps to develop the memory. Mnemotechny and knowledge: "the whole and a part," since mnemo-

techny is a branch of the whole field of knowledge. Knowledge and student: "matching pairs," because the student should apply himself to gaining knowledge. Student and lecture hall: again "matching pairs," since the student spends much of his time in the lecture hall. Lecture hall and acoustics: "subject and quality," because good acoustics are usually found in lecture halls. Acoustical and visual: "contrast," because we know that people are apt to be either acoustical (ear-minded) or visual (eye-minded). Visual and book: "matching pairs," for the eye-minded learns best from reading a book.

And now, start with the word school and recall what idea you associate with it. I am absolutely sure that the word child occurred to you and I am just as sure that you will connect the concept memory with the word child without even thinking about it. In short, you are able to build up the whole series of concepts from memory without any conscious effort on your part to impress the words on your mind.

This result is, of course, based on the hypothesis that you have chosen your association-laws as I requested, instead of merely reading those I suggested. But if you did not heed my advice, you cheated yourself of the pleasure and surprise of repeating effortlessly this entire series.

The reason why this experiment was so successful, although you did not "learn" the words in sequence, was because you were unconsciously forced, in your search for the association-law, to concentrate on the two important concepts in question though only for a short while. Because this short while was correctly utilized it was sufficient to impress the words in your memory without effort and in fact without intention on your part.

From this you can see what far-reaching consequences this experiment promises for your memory.

But for the present it is enough for us to realize that this method can be used to great advantage in making addresses, without constantly referring to a manuscript. Nothing is more exasperating than reading an address from a manuscript. You can learn the right method for delivering an address entirely from memory, using merely a few cue words as aids to memory.

The words which we have just impressed on our minds with the help of association-laws were not chosen at random, but can serve as cue words for the introduction of an address on "The Cultivation of the Memory." This address might run as follows:

"Modern school methods for training the memory leave much to be desired. In school the child is almost always told what he must learn without having been taught how he should learn it. And too little attention is paid to the fact that the memory functions differently in different pupils. Consequently not only general aids but individual helps which must be given if pupils are to learn anything are overlooked. Such aids to learning are provided in superior degree by mnemotechnical methods since they not only facilitate study in individual cases, but by and large help develop everyone's memory. More attention should be paid to these methods outside school, too; this especially should hold true for those who follow professions for a livelihood.

"All knowledge is worthwhile not only for its own sake but for the subject matter it furnishes the mind, and therefore we should, of course, not be indifferent as to whether or not this matter is remembered systematically and log-

ically. It follows that no student should neglect acquainting himself with the basic principles of mnemotechny and applying them to his profession. Quite aside from all other benefits it is a matter of common sense for him to find out what advantages they may afford him in the lecture hall and in his classes. If he is acoustical (ear-minded) the sound waves which reach his ears will make a deeper impression than they will on the visual (eye-minded) students. The former will therefore benefit more by attending lectures, preferring them to study from books, while with the latter the opposite is true."

When you read this list of words and the address in which they are used, the great help this method offers will not be quite apparent to you. But let a few days elapse without looking again at the list of words or the address. After two or three days test yourself, find out how many of the words and how much of the address you still remember. You will be amazed when you see for yourself that you remember considerably more than you are accustomed to demand from your memory. If you again wait for a few days, say a week, and once more test your memory, you will find that you can recite the list and the address from memory without a mistake.

EMPLOYING A CHAIN OF THOUGHT AS AN AID TO MEMORY

When a monkey wants to get fruit from a tree, he first climbs up the trunk and then out on the limb to pick it. When a man wants to get fruit from a tree, he takes a stick to knock it down, or a ladder, if he cannot reach the fruit with a stick. The difference between monkey and man --both of whom have the same objective, getting the fruit--

is that the former relies on his muscles while the latter solves the problem with mechanical aids, the stick or the ladder.

Nowadays no one would think of loading a steamship by carrying the cargo to the hold on his back, piece by piece. Huge cranes are used which do the same work in a fraction of the time required by manual labor.

Man has learned to lighten his toil by employing mechanical aids. These mechanical aids had to be invented, a simple matter in the case of the stick, somewhat more involved in the case of the ladder, and exceedingly complex in the case of the crane. Yet there is no question that the invention of mechanical aids to lighten certain tasks was a step forward, or that the time spent in perfecting these inventions was used to greater advantage than if it had been consumed in accomplishing the immediate task in hand.

So far we have confined our discussion to manual labor and therefore the question as to whether the same fundamental laws apply to mental effort is pertinent at this point. Looking about for examples, the first that come to mind are mathematical formulas and the like. Every one knows that the builder who wants to put up a house or the engineer who is about to construct a bridge needs a great number of formulas to insure the soundness and durability of the structure. The technical training of the architect and the engineer consists, in part, in acquiring a sound knowledge of the formulas. It is true that the task of learning formulas is difficult, but no one seriously believes that it would be better for the engineer to save himself the time spent in learning them and build the bridge without them, waiting to test the carrying capacity of the structure after it had been erected.

Even in abstract thinking, one can seldom carry a

thought through in a direct line from beginning to end. In almost every instance it is necessary to employ a chain of thought, that is, a series of intermediary links which, while not directly related to the matter in hand, help in arriving at the conclusion with less effort. We make use of a chain of thought when a direct connection, whether it be visualization or association of ideas, adds difficulties.

We have seen that such difficulties can arise, as for instance when we tried to associate the concepts *checkerboard* and *thrush*. We experienced difficulty in making a direct connection between the two, so we shall now try to effect one more quickly by employing a chain of thought. To do this, we must find ideas that will let us pass effortlessly from one to the other. I propose the following as an example in connecting the concepts *checkerboard* and *thrush*:

Checkerboard, turn, tern, bird, thrush.

It is unnecessary to point out that one word links up with the next in simple, logical fashion. In playing checkers, each player plays in turn. Turn reminds one of tern. A tern is a bird. And bird leads to thrush.

Of course, other chains of thought are possible:

Checkerboard, checkers, wood, wood thrush, thrush.

Here the chain of thought is: On the checkerboard we play with checkers made of wood. Wood reminds us of wood thrush, hence thrush.

To show what countless variations there are in linking ideas together, I quote a third:

Checkerboard, move, movies, sing, thrush.

We make a move on the checkerboard. The word reminds us of movies in which people sing. Sing brings thrush to mind, because the thrush has a sweet song.

And now to the question: What practical purposes do

such chains of thought serve? Well, they serve not one but a whole series of practical purposes. They are especially useful in learning a foreign language, in remembering the names of people we meet professionally or socially, and in other things which we shall consider later. But before we enter into a discussion of these things I should like to emphasize the practicality of this method, since I am often questioned about it at the beginning of my course. I stress the phrase "at the beginning" because as time passes everyone who goes into the matter seriously learns to appreciate its practical values.

The problem is this: Given the word *checkerboard* you are to impress the word *thrush* on your mind so firmly that both concepts will be remembered, not merely for a short time but for a period of years.

The average man applies the method which he uses in learning a vocabulary of foreign words; that is, he repeats the two words one after the other until he thinks he has them fixed in mind. What is the weakness of this method? It does not take long to find it. The human mind is so constituted that it is always looking for something new. If the vocabulary or words to be memorized are repeated one after the other in a more or less mechanical fashion, they offer nothing new for the mind to grasp. It wanders and busies itself with something else while the lips mechanically keep on murmuring the words. What happens is the exact opposite of concentration. It is a direct invitation to wool-gathering, for such absent-mindedness really ensues when we try to learn something yet at the same time let our minds be occupied by something else.

The method of employing a chain of thought has been charged with wasting an unnecessary amount of time in the search for "linking words" in the chain. The array of exam-

ples which I gave shows that time spent in thinking of these helps is in no way wasted. Moreover, these helps make the work of remembering so much easier that the lost time is made up speedily.

A second charge brought against this method is that, in learning "linking words" the memory has more work to do than if it confined itself to associating the two words that are to be memorized. This is disproved most quickly by actual practice. If you employ this method of aiding the memory for a time, you will notice that the linking words were very useful indeed in making initial impressions but that the memory itself eliminates them later, while it retains the first and last links of the chain.

If this is not clear to you now, please consider how often you follow the same procedure in everyday life. For instance, when you take up typewriting, you spend a good deal of time in learning and remembering what letters are on the different keys. No matter what system he uses, every typist knows that in time he grows accustomed to hitting the right key automatically, without stopping to think of what letter is on the key.

Again, when we are learning a foreign language, the new words are the most important thing, and before we do anything else we must learn to translate them from our mother tongue to the new language. The farther we progress in the foreign language, the farther into the background this linking of words recedes until finally, when we can really speak the new language well, we think in it naturally, without translating.

These illustrations indicate the wide variety of chains of thought which can be cited from everyday life. Our ever-active memories gradually discard the linking thoughts and retain only those which are useful and necessary.

CHAPTER VIII

LEARNING WORDS

EVER since people began to engage in trade and commerce and thereby to come into contact with foreigners, they have had to learn the language of the country with which they wished to do business. Because acquiring a foreign language is one of the oldest branches of knowledge, one would think that during the many years which have passed a method could have been found for making the study-process easier and the learning-process more effective. In reality, however, only the last few decades have produced a small number of volumes based on a truly rational method. Most textbooks still prefer to follow the tradition sanctified by long usage. Pochlmann points out, quite correctly, that Latin textbooks for beginners usually introduce *farmer-agricola* early in the course. The student must keep impressing this word on his mind by the usual process of repetition until it sticks. How much easier it is for the student to learn that acre is *ager*, aided by the similarity in sound of the two words. If in addition he has learned that to *cultivate* is *colere*, no extra time or thought need be spent on the compounded word *agri-cola* (*ager colere*).

This example is but one of thousands which could be cited from foreign-language textbooks.

It is more logical and to the point for anyone who wants to learn a foreign tongue to study first of all those words

which are spelled the same, or nearly the same, in his own language. In English-German there are, for instance:

rose—Rose
ring—Ring
gold—Gold
grass—Grass
rust—Rost
man—Mann

Then follow the words which, while differing in spelling, yet have a fairly similar sound:

steel—Stahl
moon—Mond
father—Vater
come—kommen

Whether such words are few or many depends upon the degree of relationship between one's own language and the particular foreign one.

If thought-associations like those given above cannot be made, that is, if the foreign word sounds entirely different from the same word in our own language, we can lighten our task of learning it by employing linking words.

Naturally this plan again offers various possibilities. The simplest and most effective is to find a linking word in one's own language, a word which in *meaning* is similar to the given word but in *sound* resembles the foreign word to be learned. If we go back to the Latin, we find the following example:

In Latin, *hand* is *manus*. In English, we have the word *manufacturer*, originally someone who made something by hand. If we therefore insert *manufacturer* as the linking

word between *hand* and *manus*, we use this chain of thought: I am trying to think of the Latin word for *hand*. *Hand* reminds me of the man who makes something by hand or causes it to be made by hand, therefore *manufacter*. If I know this word, I can easily recall the Latin word *manus*.

Another example: To *know* is *cognoscere* in Latin. These are entirely different words, and there is apparently no connection between the two. But if I *know* someone I can say I *recognize* him. This word is so similar to the Latin term I am trying to think of that memorizing the latter offers no further difficulty.

There is a twofold advantage in learning words in this way: First, stupid, parrotlike repetition is done away with. The habit of endless repetition, as I have pointed out, tends to destroy concentration. Second, terms learned by the method I have outlined make a much deeper impression and remain in the memory much longer, once they are learned. The reader cannot check this assertion offhand; but try to learn foreign terms with the aid of a modern textbook or by inserting your own linking words and you will shortly see how astonishingly well you remember them.

Now, of course, there are a great number of terms for which it is impossible to find linking words as closely related in meaning to the words in one's own language as the cited examples. In spite of this fact we need not discard our method. Basing my conclusions on an extensive study of many languages, I have found that in almost all instances it is possible to discover a word in our own language that is similar in sound to the foreign word. Once I know such a word, with a little practice in inserting linking words I can make a connection in my own language whenever a natural connection does not exist.

The following examples demonstrate this point:

The English word *tomb* is entirely dissimilar and has no relationship to the German word *Grabmal*. But it is easy to form a connection between *tomb* and *grave*, and the latter word sounds so much like the German word *Grab*, that remembering it presents no difficulty. Since actual practice is much more instructive than theory, I shall present a series of examples, emphasizing the fact that the etymology of the words is entirely beside the point. I assume that the etymology of the word is *unknown* to the reader, for if it is known, we can naturally dispense with mnemotechnical aids.

Examples for English-French:

top	summit	sommet
women	feminine	femmes
share	part	part
danger	risk	risque
insanity	demented	démence
middle	center	centre
busy	occupied	occupé
death	mortal	mort
house	mason	maison
news	novel	nouvelle
noon	midday	midi
mail	post	poste
song	chant	chanson
speed	rapid	rapidité
food	nourishment	nourriture
duty	function	fonction
clock	hour	horloge
shadow	umbrella	ombre
ear	aural	oreille

Examples for English-German:

basement	cellar	Keller
cloakroom	wardrobe	Garderobe
tomb	grave	Grabmal
merchandise	ware	Ware
duty	toll	Zoll
soft	weak	weich
assist	help	helfen
boy	young	Junge
dog	hound	Hund
savage	barbarian	Barbar
letter	brief	Brief (a brief letter)
flower	bloom	Blume
flour	meal	Mehl
enemy	fiend	Feind
meat	flesh	Fleisch
road	way	Weg
carpet	tapestry	Teppich
table	dish	Tisch
shave	razor	rasieren

Examples for English-Spanish:

child	infant	infante
horse	cavalry	caballo
door	portal	puerta
heart	core	corazón
mind	mental	mente
neck	collar	cuello
at once	prompt	pronto
prize	premium	premio
table	mess	mesa
knife	cut	cuchillo
scale	balance	balanza

wages	salary	salario
untruth	false	falsedad
star	stellar	estrella

Examples from English-Latin:

home	domicile	domus
big	magnify	magnus
peace	pacts	pax
chief	principal	princeps
king	reign	rex
slave	serve	servus
life	vital	vita
light	luminous	lux
shelter	protection	tecta

From experience I know that at first glance this method of learning terms will seem odd to many of my readers. Put it to the test of actual practice, however, before forming an opinion. Just make the following experiment: In the next few days learn one or two hundred foreign words by the method you usually employ: in the following few days learn the same number in the same language (naturally different words) by the method I have outlined, that is, by the insertion of linking words of your own choosing. Then let the whole thing alone for a week or two, without even thinking about it.

After about two weeks see how many words you remember of those you learned by the old method and how many you learned by the new method of employing linking words.

I can tell you in advance that the latter figure is sure to be 100 or 200 per cent higher, that is, you will have remembered at least twice as many words, perhaps even

three or four times as many as you learned by the old method.

If this is not the case, you have made some mistake in studying. If that should happen, write to me and I will help you try to find it.

Do not form a hasty opinion, but wait until you have tried the experiment yourself. Practice is the only sure test of a workable method of study.

Remember that everything new first meets with opposition and that every forward step is apt to be greeted with a headshake. That is only human.

When railroad trains were invented and the first train was to swoop along at the then unheard-of speed of twenty miles an hour, the Prussian Academy of Medicine proclaimed that no one could suffer such speed without going crazy, and in all seriousness demanded that a high wooden fence be erected along the entire length of the track, so that innocent bystanders would not be scared out of their wits by the sight of the madly speeding monster.

It took Gillette many years to convince men that his razor is safer than the old-fashioned blade. Dozens of illustrations come to mind, all proving that the new always meets with opposition. In the present instance, you have a great advantage over Gillette: You need invest no money, build no factories, nor the like. You have only to make an experiment with your own mind before you come to a decision on the matter.

CHAPTER IX

REMEMBERING NAMES

TIME and again one hears someone say, "I know that man but I can't think of his name." If this has happened to you—and the chances are that it has, not once but frequently—you know how awkward such forgetfulness can be.

In business you make a very unfortunate impression if, after having talked to somebody, you later meet him again and cannot recall his name. It is even more annoying to call a business firm on the telephone and be unable to give the name of the man with whom you have previously dealt and would like again to deal.

It is just as embarrassing socially, when you cannot recall the name of the person you are about to introduce. He or she often interprets this as lack of interest and thinks, "He cannot value my society very highly if he doesn't even remember my name."

Therefore a method of memory-training that will help us in remembering names is of unquestionable value in daily life, and here again we find that the method of association, especially through a chain of thought, will give us the help we need.

Here, too, we begin with names that have a particular, obvious meaning in themselves. If we leaf through a telephone book or a directory, or if we look about among our acquaintances, we find a great number of names that represent an immediate concept. For instance:

Names from the animal kingdom such as Lyon, Fox, Wolf, Salmon.

Names from the vegetable kingdom such as Plant, Weed, Tree, Wheat.

Names from the mineral kingdom such as Cole, Gold, Stone, Garnet.

Names descriptive of a trade or occupation such as Miller, Fisher, Cooper, Smith.

Names of colors such as Black, White, Green, Brown.

With names of this sort it is easy to connect the meaning with the bearer. Several methods are available for the actual connection, as we know. We may form a *pictorial image* or use the *laws of association* or make *connecting links*. Furthermore, we can tie up the name with some noticeable trait in the man or some characteristic of his business. For example, in a leather goods store which I patronize there is a Mr. Brown. I can note the name by associating it with some article of brown leather purchased from him. Or when I hear his name I can notice something brown about his person, for instance his hair or unusually dark complexion.

Should one of my acquaintances be named Lyon, I would make a connection between the animal and the man's character. If he happens to be courageous or lordly, the connection is simple. We know, however, that *contrast* is just as good an association-law as *similarity*. So it is as easy to make a thought-connection if the person in question is timid or if I can imagine him in a situation where I think he would be timid.

If a visual image is easier for me than thought-association, in the case of Mr. Salmon I try to picture him at table, enjoying a tasty bit of broiled salmon.

Perhaps a picture of this sort strikes you as rather absurd

at first glance, but do not pass judgment until you have tried out the idea!

If you apply this method to your circle of acquaintances and especially to people you are meeting for the first time, you will discover that it is the absurd picture which impresses itself most easily and remains most firmly fixed in your memory.

Of course, the advertising profession has long known this psychological truth and you need only look at advertisements to confirm the fact that absurd illustrations are used far oftener than those depicting sober, everyday matters.

Naturally all personal names do not have meaning in themselves. First of all there are names which, although they themselves have no significance, look or sound like words with distinct meaning.

For instance, if we wish to remember a "Mr. Nafe," it is quite easy to substitute the word *knife* for the meaningless name and so remember a word which we can bring into association with Mr. Nafe's personality. Should we wish to note the name "Murrell" we would substitute the word *mural*, which is similar in sound. For the name *Powell* we could think of *rowel* or *towel*, whichever word fitted the personality of the individual better. Of course, it does not matter whether the substituted word, similar in sound, is taken from the animal or the vegetable kingdom or from some other classification. The word must merely have a distinct meaning in itself and we must be able to tie up the word with the person who bears it. And you need not be afraid of addressing Mr. Powell as Mr. Rowel or Mr. Towel. In actual practice you will soon notice that you eliminate linking words, a habit we have discussed before, and hold in the memory only those which should be retained.

Even when the designated names are really difficult to remember and it is hard to find substituting words, this method is worth cultivating. Examples of such substitutions are given in the next chapter.

CHAPTER X

REMEMBERING THE STATES AND THEIR CAPITALS

OUR next problem is to learn how to master names which are especially difficult to remember and for which we cannot easily find meaningful words of similar sound. How shall we set about memorizing, by a simple method, a rather long, collective series of difficult names? As a concrete example, let us take the forty-eight states of our country.

There are some people, of course, who visualize the map so clearly that they can name the states according to their geographical location, that is, reel off their names as though reading from an actual map. A person who can do this naturally does not need any mnemotechnical aid, since mnemotechny should be employed only when certain facts are hard or impossible to retain naturally. But even these persons will find it worth while to read the solution of this problem carefully, because the same method can be used for all sorts of other things difficult to memorize.

First of all, write down the complete list of names serially—in this instance, the states of the United States. Beside each state write words of similar sound which have a sensible meaning. The degree of similarity in sound is an individual matter. For the person who relies greatly on aid the sound must be very like that of the word to be memorized. The relationship here resembles that of actor and

prompter. The actor who knows his part pretty well needs to be prompted only occasionally, but the actor who is just beginning to learn his lines has to rely on the prompter during the whole performance.

Taking the states in alphabetical order, we begin with Alabama. The word nearest in sound to Alabama perhaps is *alabaster*. Then there are *allah*, *alas*, *alarm* and *all able*. These rather exhaust the possibilities, although you may think of a few more. Going down the list of states in this way, we have something like the following:

1. Alabama	Allah, alarm, alabaster, all able, alas, Alp
2. Arizona	aristocrat, arithmetic, arena, area, arid arid zone
3. Arkansas	ark, arc, archaic, architect, archives, archaeologist
4. California	caloric, calibre, calico, calipers, call
5. Colorado	color, college, colleague, collect, collision, colonist
6. Connecticut	connect, connexion
7. Delaware	delegate, delectable, deliberate, delicious, deliver, delusion
8. Florida	florist, florid, floor
9. Georgia	George, geography
10. Idaho	Ida, idea, idol, idle
11. Illinois	ill, illness, illiterate, illogical, illicit, illegal
12. Indiana	Indian, india-rubber, indicate, indigo, in- direct, indiscreet
13. Iowa	I owe, I.O.U., iota, iodoform
14. Kansas	can (verb), can (noun), candidate, can- cel
15. Kentucky	kennel, ken, Kenneth, Kent
16. Louisiana	Louis, Louise
17. Maine	main

- | | |
|--------------------|--|
| 18. Maryland | Mary, married, marriage |
| 19. Massachusetts | message, mass (a lot), mass (in church),
massive, master, massage |
| 20. Michigan | mischance, misshapen, Michel, mission |
| 21. Minnesota | mineral, minister, minute, mingle, Min-
nie |
| 22. Mississippi | misses, misuse, miss, missed |
| 23. Missouri | Miss Urey, miserable, misrule, misuse,
misunderstand, miss |
| 24. Montana | mountain, month, Monday |
| 25. Nebraska | nebulous, Neptune, nap |
| 26. Nevada | nephew, never |
| 27. New Hampshire | ham, hemisphere, hamper |
| 28. New Jersey | jersey, jerk, jerry, Jerry |
| 29. New Mexico | maximum, mechanic, new mechanism |
| 30. New York | York, yawn, yoke, yore |
| 31. North and | } cars, carols |
| 32. South Carolina | |
| 33. North and | } doctors, code, day coach |
| 34. South Dakota | |
| 35. Ohio | high road, Oh I |
| 36. Oklahoma | oak, o'clock |
| 37. Oregon | origin, original, or, oar, orange, ore, organ |
| 38. Pennsylvania | pencil, pen, paint, pensive |
| 39. Rhode Island | road, wrote, rode, rodent |
| 40. Tennessee | tennis, ten |
| 41. Texas | taxes, takes, taxi |
| 42. Utah | utter, to utter, utterance, you, utensil,
utopia |
| 43. Vermont | verse, vermin, vermilion, very |
| 44. Virginia | } Virginia, virgin |
| 45. W. Virginia | |
| 46. Washington | Washington, wash, washing done |
| 47. Wisconsin | whisky, whisk, whisker, wish, wisdom |
| 48. Wyoming | why, wine, whine, why omit |

For the present we are not trying to memorize the states in any particular order. Our problem is merely to associate substituting words for the individual states, naturally one word for each state. The simplest way is to make up a story incorporating one of these key words for each state. Such a story might read:

George and Louis, two doctors, rode with the Misses Mary and Ida in taxis on the special mission. The two cars came from the arid zone of Mexico over the nebulous mountains and took the main road connecting Kentucky and New York.

George was an architect and the son of a minister. His business flourished, he drank whisky and wine to prevent illness and ate two Virginia ham sandwiches, which were delicious. He played tennis, had a daily massage, lived in a utopian world and played the organ in his alabaster home.

Louis was a vermillion Indian, who wore a colored jersey over a calico shirt, which he never washed. He wrote an I.O.U. with his pencil and canceled his 10 o'clock date with Miss Urey in Ohio.

The names of all forty-eight states are in this story. Every boldface word was chosen from the key words previously given. Only forty-five words are given in boldface because the Carolinas, Dakotas and Virginias are introduced only once, but in every instance the word *two* appears with it (two doctors, two cars, two Virginia ham sandwiches).

As you will see, this little story can be memorized merely by reading it through four or five times. It will take only ten or fifteen minutes if you have improved your memory

steadily by doing our exercises. It usually takes hours to memorize the names of the forty-eight states, and anything learned so tediously and arbitrarily is apt to be forgotten in a few weeks or months. The little story quoted here is so easy to remember that you run no risk of forgetting it. Merely note: the first paragraph tells about the trip George and Louis made; the second describes George's personality; and the third, Louis's personality.

But let me again remind the reader: one remembers best the stories he invents himself. If you would like to remember the states, I suggest that you make up a story yourself, using the key words given above or others of your own choosing. You will remember this story more easily because your own creative activity is involved. I should be pleased to have you send me any little stories you write.

In order to show you that the story given above is not the only possible one, I cite a second, built on the same system and following the same rules. This example is better because it incorporates the states in geographical order. It begins with the Eastern states and progresses through the Middle West to the Far West.

A man rode down to Main street where he bought some very delicious hams. Then he put on his new jersey and went in a pensive mood to hear mass in a New York church.

In connection herewith he observed on the floor two paintings of the Virgin Mary by Michel, heard two carols and listened to the wisdom of a preacher. He met George and Louis, but alas he missed Kenneth.

Outside under an oak he said to Miss Minnie: "Oh, I want to tell you, you can collect the ten dollars I owe for

the new arc, since I was ill, but I never could understand why it takes so much new mechanism to put it up."

When he got home, he said to Ida: "You call to that Indian hiding behind those two day coaches to wait for a nebulous day before washing the ore in those arid mountains."

Now that you have memorized the states, suppose you take the next logical step and learn their capitals. Because we remember those things best which have meaning in themselves, we choose substituting words for the capitals as well as the states. The factors we have considered before hold true for these words too, that is, the more nearly they sound like the original word and the more simply they can be connected in meaning with the original word, the better they are. Let us begin with the first state in alphabetical order:

The capital of Alabama is Montgomery. Montgomery reminds us of mountain (if one knows French, so much the better, for *mont* means mountain), and among the key words for Alabama we have Alp. Alp and mountain are closely connected in our minds. So we can easily impress the following on our memories:

Alabama—Alp—mountain—Montgomery.

Here are some further examples:

Florida	floor, tall house, Tallahassee
Georgia	Atlantic seaboard—Atlanta
Idaho	idle boys—Boise
Illinois	ill—spring fever—Springfield
Iowa	I owe money—Des Moines
Maine	May—August—Augusta
Minnesota	minister—preach—St. Paul

New Jersey	jersey—cloth tent—Trenton
New Mexico	sandy—Santa Fe
North Dakota	Nordic—Bismarck
Ohio	high in history—Columbus
Pennsylvania	pencil—hurry—Harrisburg
Texas	taxi—car—Austin
Wyoming	O Ming—Chinese—Cheyenne
Washington	Capitol—seat of law—Olympia

The associations suggested here are so easy to formulate that further explanations are unnecessary. It is possible to learn and remember the names of the forty-eight state capitals by this method in about one half-hour, while memorizing them in the traditional manner would consume many hours and even then be unreliable.

CHAPTER XI

REMEMBERING THE PRESIDENTS OF THE UNITED STATES

EVERY American should know the names of the Presidents, but our task becomes more involved when we attempt to remember names in a definite, unchangeable order. The little stories in the preceding chapter illustrated how much easier the task of memorizing is when we are completely free in using our substituting words in a composition. In learning the Presidents of the United States we have no such freedom, for in this case a serial order is the most important factor. While this restriction makes composition of the story a little more difficult, it does not affect the system itself.

First we list the Presidents and find substitute words for their names, a process which need not be explained again. Then we work out a story embodying these substitute words just as we did in the case of the states, except that in this instance we must use them in historical order. The story might run somewhat like this:

In Washington Adam was jeopardized by a mad mon-
ster. Adam and Jack ran to the bureau, but in their hurry
they broke a tile or poked a tailor. They filmed more
buildings, pierced by a cannon which was linked by John
to a grand tree.

The haze over garden and field sheltered Arthur, who

cleaved his way in a hurry. He cleaved mockingly as he cried: "A rose taffeta dress will hardly be the right thing in a college; but whoever desires rose veils may wear them."

The underlined words mean:

Washington	Washington
Adam	Adams
jeopardized	Jefferson
mad	Madison
monster	Monroe
Adam	Adams
Jack	Jackson
bureau	Van Buren
hurry	Harrison
tile	Tyler
poked	Polk
tailor	Taylor
filmed more	Fillmore
pierced	Pierce
by a cannon	Buchanan
linked	Lincoln
John	Johnson
grand	Grant
haze	Hayes
garden and field	Garfield
Arthur	Arthur
cleaved	Cleveland
hurry	Harrison
cleaved	Cleveland
mockingly	McKinley
rose	Roosevelt
taffeta	Taft
will	Wilson
hardly	Harding

college	Coolidge
whoever	Hoover
rose veils	Roosevelt

This story is somewhat harder to learn than the one about the states, because of its prescribed order. Nevertheless, one can learn this list without special effort in half an hour, while to learn the Presidents without such aid takes much longer.

Every American is expected to know not only the names of the Presidents in chronological order but also the dates of their terms. The latter, too, is considerably lightened by mnemonics, but before we attempt it we need further preparation. We will return to its solution in a later chapter.

The following interesting version of the list of Presidents was worked out by one of my colleagues. It is excellent in that it avoids many connecting words. This series, a masterpiece in phonetics, is also easy to learn:

Washing done,	a dame	gave her son	medicine.	We know
Washington	Adams	Jefferson	Madison	Monroe

at times that son,	a wine bum,	had his son	dial (telephone)	her:
Adams	Jackson	Van Buren	Harrison	Tyler

broke;	tell her,	fill my	purse.	By cannon	and gun
Polk	Taylor	Fillmore	Pearce	Buchanan	Lincoln

John's son	groaned	to haze	our field.	Are they
Johnson	Grant	Hayes	Garfield	Arthur

gleeful and merry,	son?	Cleve and	Mack when they	rose felt
Cleveland	Harrison	Cleveland	McKinley	Roosevelt

tough.	Well, son,	Hearty!	College over.	Who's fooled.
Taft	Wilson	Harding	Coolidge Hoover	Roosevelt

CHAPTER XII

STREET NAMES AS A MEANS FOR REMEMBERING WORDS

WITHOUT turning back, repeat the series beginning with the word school and ending with the word book. You can still repeat this series by heart, *provided you supplied your own association-laws at the time and did not restrict yourself to those I suggested*. If you make an honest effort you will find that you can repeat the series backward, too; that is, begin with the word *book* and end with the word *school*.

In spite of this forward step, encouraging as it is, we still have one disadvantage to overcome in mastering our method, in fact any method. And this is: You can repeat this series forward or backward, but you cannot possibly name the fifth or eighth word in the series. Of course we can search out these words by starting at the beginning and counting them off. But we want to try to avoid this counting off and tell immediately which word belongs to any number at all. How can this be done?

There are things so familiarly connected in our minds with figures that counting off no longer comes into question. To these belong, for instance, the names of the twelve months. Every child knows that April is the fourth month, August the eighth, and December the twelfth month of the year without having to start with January and count off to four or eight or twelve.

Therefore we might tie up the words which we want to remember in their serial order with the names of the months and by doing so we would have made a good start. In itself this method is plausible, but it has a drawback in the fact that the names of the months are themselves abstract. And association with abstract ideas is, as we know from experience, more difficult than association with concrete things. Therefore I have a suggestion to make, primarily intended for the reader who knows New York City rather well, but easily transferable to any other city, as I shall explain.

On New York's Manhattan Island the avenues as well as the streets are numbered. If we choose the avenues numbered from one to ten, we have a series which precludes errors precisely because the numbers follow each other in consecutive order. The better the reader knows New York, the easier it will be for him to tie up a distinct idea with each avenue. *How* he chooses these ideas is up to him. The important thing is not that anyone else should be able to understand or use these thought-associations but that he himself be proficient in them.

For instance, if your uncle or a good friend lives on Fifth Avenue, you will associate the person with the thoroughfare so definitely that you substitute him for the avenue itself. In this connection, always use, when you can, your own thought-associations rather than those I suggest, as the less arbitrary and the more individual they are, the more useful you will find them.

The reader who does not live in New York should not try to learn the following, but should merely read it. Later we will devise a method for other cities:

With this injunction in mind, I propose:

1. With First Avenue we associate the idea of the East River, since it is in close proximity to it.
2. With Second Avenue we associate slums.
3. With Third Avenue we associate the German district, since that is in the neighborhood of Third Avenue and Eighty-sixth Street.
4. With Fourth Avenue we might associate doctors, since it runs into Park Avenue where there are many doctors' offices.
5. For Fifth Avenue we will substitute the idea of wealth, since exclusive and expensive stores are found on it.
6. Sixth Avenue is known as the employment district, sometimes referred to as "the slave market." So we will tie up the idea of employment with this avenue.
7. Seventh Avenue has theaters as its most familiar thought-association.
8. Eighth Avenue reminds us either of Central Park West, into which it runs, or the municipal subway.
9. For Ninth Avenue we substitute Amsterdam, because it runs into Amsterdam Avenue.
10. For Tenth Avenue we think of Columbus, because Tenth Avenue runs into Columbus Avenue.

We now have the following series, which the New Yorker need not make any special effort to learn because it is already familiar to him through experience and knowledge:

- | | |
|------------------|------------------|
| 1. First Avenue | —East River |
| 2. Second Avenue | —slums |
| 3. Third Avenue | —German district |
| 4. Fourth Avenue | —doctors |
| 5. Fifth Avenue | —wealth |
| 6. Sixth Avenue | —employment |

- 7. Seventh Avenue —theaters
- 8. Eighth Avenue —Central Park West
- 9. Ninth Avenue —Amsterdam
- 10. Tenth Avenue —Columbus

Furthermore, let us assume you do not yet know the series school to book and are to take it up for the first time. This series ran:

- | | |
|----------------|-----------------|
| 1. School | 6. Student |
| 2. Child | 7. Lecture Hall |
| 3. Memory | 8. Acoustics |
| 4. Mnemotechny | 9. Visual |
| 5. Knowledge | 10. Book |

We are ready now, however, to learn not only the word itself but also its place in the list and its number:

It is done in this way: The first word is school. We associate this first word with the first word in the street-series given above, that is, we tie up the idea of East River with school. The simplest way to do this is to picture a school which is directly on the river, or school children playing along the river.

The second word to remember is child. We tie it up with the second word in the street-series and thereby associate slum with child. This is easy. We recall either how unhealthy and anti-social the slums are for a child, or children playing in the slums.

The third word is memory, to be associated with German district. This association is not difficult, either, if we remember that great German thinkers, like Goethe and Schiller, still live in peoples' memories.

The fourth word is mnemotechny, and it is to be tied up with Fourth Avenue, therefore with doctors. The easiest

association is that the doctor has to learn a great many things for his examinations which he can best acquire with the help of mnemotechny.

The fifth word to be learned is knowledge. The association of knowledge with wealth is simple, since we can think of the aid wealthy people, Rockefeller, for instance, have given to the spread of knowledge.

The sixth word is student. It is to be tied up with employment. This association is not hard, because of course every student pursues his studies in order to make good in his future employment.

The seventh word to be learned is lecture hall. It is to be associated with the theaters on Seventh Avenue. Again the matter is simple. A fine auditorium is the main thing in a theater, and auditorium naturally calls a lecture auditorium or hall to mind.

Acoustics is the eighth word to be noted. It is to be tied up with Central Park West. So we think of the bandstand in the park, which is equipped with loudspeakers to better the acoustics.

The ninth word to be remembered is visual. It is to be tied up with Amsterdam. This is the first association that might offer difficulty to the beginner. But he can surmount it if he recalls that Amsterdam is a very old, romantic city with many things to interest the sight-seer. The idea of sight is then associated with visual without further trouble.

In this connection do not make the mistake of observing there are of course many other cities worth sight-seeing. In doing so you forget that the word visual is not your starting-point for Amsterdam, but that Amsterdam is your starting point for visual. If you keep clear on this, you will not run the danger of mixing up the name.

Connecting the tenth word book with Columbus is again a simple matter, as we need think of only one of the many books written about Columbus and the discovery of America.

When you have read up to this point, please make the following experiment: Traverse the ten avenues again in your imagination, noting their characteristics, and try to recall the word for each one which we linked with it. I am absolutely sure that this will present no difficulties and that you will find that you can remember them easily.

In this instance, however, you have the odds over your earlier method of learning them, in that you can associate a clear concept with every number. It is no harder for you to name words chosen out of order than to repeat them serially.

For instance, if we want to know what number five is, we need not begin with one and count off, for we know that with Fifth Avenue we have associated the idea of wealth and that many wealthy people spend great sums for the benefit of knowledge. Unquestionably the word for number five is *knowledge*, without any "counting off."

Later we shall talk about the advantages this process brings with it. But for the present we will work out jointly a further illustration.

Assume you are going to give a party and have to make the following provisions for it: Wine, napkins, cigarets, tea, coffee, a waiter to pass refreshments, place cards, flowers, oysters, and whisky.

The sequence I gave for your commissions is not arbitrary, but the order in which they are to be made, starting from your own home.

If you know the formulated sequence of avenues, the thought-connections I now present will seem very simple.

If you do not know the sequence well, write down the ten key words from *East River* to *Columbus*; then try to make the following thought-associations with me.

1. East River—wine. Water flows in the East River, and water immediately reminds us of wine.
2. Slums—paper napkins. The slums are usually dirty and need cleaning. Paper napkins are used for cleaning.
3. German district—cigarets. Germans are great smokers.
4. Doctors—tea. The doctor is called for sick people. Sick people drink tea as a stimulant.
5. Wealth—coffee. Dinners with rich food should be followed by coffee.
6. Employment—waiter. Employment agencies provide the waiter you need for your party.
7. Theater—place cards. To get into the theater you need a ticket, which easily reminds you of place cards.
8. Central Park—flowers. Imagine flowers growing in Central Park.
9. Amsterdam—oysters. Think of Amsterdam, which is in Holland, famous for its oysters.
10. Columbus—whisky. Remember Columbus discovered America, and whisky is typically American.

When you have come to this point, check the things you must procure with your list of key words, or better still, in your head. You will be greatly encouraged at your ease in doing so, and at the certainty of your memory. And it will not be difficult for you to name the fourth, seventh or tenth word out of its proper order.

But you must make the attempt yourself and not be content merely with reading these lines.

Yet do not think the thought-associations or the key words I suggest binding and unchangeable. On the contrary, it is desirable for you to think up such thought-

connections for yourself. Do not accept those I have devised without making your own substitutions.

Those key words guide you best which tie up with a path you often follow and therefore know well. This can be either the way to work or a favorite, customary walk.

Here is another example of building key words, useful for the New Yorker living on Washington Heights and working near South Ferry.

Suppose he takes the subway to work, his key words might be:

1. His home on Washington Heights
2. The Cloisters
3. Medical Center
4. 125th Street and Claremont
5. Columbus Circle
6. Times Square
7. Pennsylvania Station
8. Cortlandt Street
9. Battery Place
10. South Ferry

I naturally assume that this New Yorker connects with each given place not only the idea of a subway station but also a specific concept; for instance, at Times Square the Times Building; at Pennsylvania Station, the Pennsylvania Railroad; at Cortlandt Street, the Jersey Tubes. Again I emphasize the fact that the more individual the choice of these places, the better. If a man has a good friend living on West Sixty-third Street, it is better for him to choose this friend for number five and to strike Columbus Circle from his series.

In any case, you should set up a series of this sort for

your home town and choose particular points you know well.

As a further step, do not stop with ten points but extend your series to twenty. But be careful to select easily remembered points for numbers five, ten and fifteen if you possibly can. This facilitates remembering the intermediate points.

When you have mastered these twenty points, ask a friend to call off, one after the other, any twenty subjects he chooses. It is essential to have this friend write down the subjects beforehand, since you and he will otherwise lack a check list. When he calls the first subject on his list, tie it up with the first concept of your street series, by any of the methods we have discussed. Concentrate on this thought-association and do not let anything disturb you. When you have the connection clearly and firmly in mind, ask for the second subject. Connect it with the second concept of your street series, and do not think back to the first.

Store up the twenty subjects in your memory in this way; as soon as the twenty have been called off, go over the street series in your thoughts. You will have no difficulty in associating the connections you previously set up.

But your friend, who knows nothing of these thought-processes, will be surprised and impressed at your ability to repeat the twenty subjects in proper order without a single mistake.

And you can make his surprise even greater if you offer to call them out at random, instead of in their proper order. For instance, if he wants to know the tenth word, you will naturally not have to begin counting from the beginning, knowing which of the street series the tenth

word is, and you will be able to tell him at once through the concept you have associated with it.

When you have made this experiment a few times, try it out in company. This is always an effective experiment and it will not only prove entertaining, but it will reward you for the time and effort you spent in learning the series of street names.

But of course applause is not the real goal of our experiment. This goal is twofold:

1. In this wise you exercise not only your imagination but also your powers of concentration to a hitherto unknown degree. You will soon notice how your imagination is developing, when you observe that the association of things which seemingly have nothing in common always grows easier in time. You give your powers of concentration practice in that you really fix your undivided attention on the two subjects under consideration. If you do not, the connection is not made strong enough for you to recall later.

2. The second advantage lies in applying this thought-series in everyday life. I have already given you two illustrations proving the point. First, applying words which we need in a speech, and second, applying them in errands we need to run for a party. Further examples are given in the next chapters.

CHAPTER XIII

NUMERICAL CODES

Most people find it extremely difficult to remember figures, although it is necessary to do so in every phase of modern life. Not only in school and college but in everyday life a great deal of time is spent in the tedious task of impressing abstract numbers on our memories.

The thought of our school days brings back a haze of figures learned through painful concentration, historical dates, the height of mountains, the population statistics of cities and states, and usually a great number of mathematical and chemical formulas as well, which consist largely of numbers.

The memorizing of numbers in one form or another is essential for the student, whatever profession or trade he plans to follow. The young lawyer must memorize the numbered paragraphs in volumes on law or the dates of important legal decisions. The doctor has to master, practically verbatim, countless formulas, however wearisome the task may seem.

For the business man and the merchant figures play an equally important role. Cost and selling price, the telephone numbers of business acquaintances, figures in an infinite variety of forms must burden the minds of all of us.

The chief difficulty in memorizing numbers is due to the fact that they are abstract. Not even the liveliest imagina-

tion can succeed in making a mental picture of them. Take, for instance, the number 70. We can imagine an old man of seventy, or picture a seventieth anniversary jubilee, and the like, but the abstract number 70, without reference to some concrete matter, is beyond our imagination.

We can overcome this lack of imagination, however, by applying mnemotechnic and translating figures in a simple, apt fashion into words, so that there is no further difficulty in remembering them. The method is simplicity itself—the substitution of letters for figures in such a way that the letters have an easy connection with the figures.

The substitution of letters for figures is, of course, a practice familiar to all readers who understand merchandizing. The merchant often likes to have the cost price of a piece of goods on the price tag without its being so evident that the customer can figure the profit. For this purpose he does not use unrelated letters in making his code but only those which form words and are therefore comparatively easy to remember. For instance, he may select the words “dolar” and “cents,” writing the word “dollar” with one *l*, since he cannot repeat a letter in the code. The substitution of figures would therefore be:

D	O	L	A	R	C	E	N	T	S
1	2	3	4	5	6	7	8	9	0

A piece of goods whose cost price was \$38 would therefore be labeled *ln*. The merchant himself would be able to read the tag as 38, while the customer, ignorant of the key, would not be able to translate the code into figures. Theoretically, there is no reason why we should not adopt these words with their code for mnemotechnics. In practice, however, a different system has been developed, a

system based on the frequency with which letters recur in the English language, completely disregarding the vowels.

This numerical system has been used by Berol, Roth, Loisetle and other writers on the subject, and it seems pointless not to avail ourselves of a tested method which has proved satisfactory for many years.

In forming our numerical code, the following substitution of letters for numerals is the one usually adopted:

- 1 is indicated by the letter *t*, because the *t* has 1 downstroke.
- 2 by *n* because *n* has 2 downstrokes.
- 3 by *m* because *m* has 3 downstrokes.
- 4 by *r* because the word "four" has four letters of which *r* is the fourth; and besides, *r* is the emphatic consonant in the word "four."
- 5 by *l* because Roman capital *L* means 50.
- 6 by *J*. If you turn 6 around you practically have *J*.

6 *o* 7 *K* 9 *P*

- 7 by *K*. The initial stroke in writing a calligraphic *K* is similar to a 7.
- 8 by *f*. The small written *f* and the number 8 both have two loops.
- 9 by *p*. If you turn 9 around, you have *P*.
- 0 by *z*, because *z* is the last letter in the alphabet, and the familiar Latin word zero, which means nought, begins with *z*.

As you see from reading this code system, it is extremely simple to understand and use. We now have the following:

1	2	3	4	5	6	7	8	9	0
t	n	m	r	l	j	k	f	p	z

Once the principle of substitution is clear, the next step is to extend its application. In doing this, it must be borne in mind that in this method no attention is paid to spelling; it is based entirely on the *sound* of the letters. Consequently, all letters which sound alike are considered, for our purposes, identical, and we can therefore extend the above substitutions as follows:

For the cipher 1: Use *d* or *th*, as well as *t*, since all three are similar in sound.

For the cipher 6: Similar to the sound of *j* are the sounds of *ch* and *sh*, as, for instance, in the words *chair* and *ship*. In addition, *g* when it has a soft sound as in *George*, *germ*, or *giant*.

For the cipher 7: Hard *g* belongs with the *k* sound, because in such words as *garden*, *game*, *guest*, the sound is similar. In this group, also, belongs the hard *c*, as in *calm*, *call*, *Cambridge*.

For the cipher 8: Similar to the sound of *f* is the consonant *v*, and also *ph* in such words as *phantasm*, *phone*, *phase*.

For the cipher 9: *p* sounds like *b*, for it also is a labial.

For the cipher 0: *z* is phonetically like *s*, as is also soft *c*, in such words as *cipher*, *civic*, *cigar*.

This completes the system of numerals and gives us the following:

1	2	3	4	5	6	7	8	9	0
<i>t</i>	<i>n</i>	<i>m</i>	<i>r</i>	<i>l</i>	<i>j</i>	<i>k</i>	<i>f</i>	<i>p</i>	<i>z</i>
<i>d</i>					<i>sh</i>	hard <i>g</i>	<i>v</i>	<i>b</i>	<i>s</i>
<i>th</i>					<i>ch</i>	hard <i>c</i>	<i>ph</i>		soft <i>c</i>
					soft <i>g</i>	<i>ng</i>			
					<i>tch, dg</i>	<i>q</i>			

In order to prevent any misunderstanding, let me emphasize the following points:

(1) Vowels and the consonants *w* and *h* have no numerical values, when they stand alone. This is not true when *h* is used in conjunction with another consonant to form a single sound. In this case the sound is the determinant. For instance, in accordance with the foregoing rules of substitution, *enough* would be expressed by the figures 28, because the consonants *gh* in this instance are sounded as *f*.

(2) Consonants not listed in the above table, but with sounds similar to those given, are, of course, to be classified in like manner. For example, *q* has the numerical value of 7, because it sounds like *k*. *X* is rated, as a rule, as 70 because it sounds like *ks* in such words as *extra* and *extract*. However, when it is pronounced like *z*, as in *xylophone*, it is valued as 0.

(3) Double consonants count as single ones, since the sound of a double consonant is identical with that of a single consonant. For instance, in the number code *letter* is considered as though spelled with one *t*.

(4) The phonic *ng* is coded as 7, like the hard sound of *g*, since it might easily be confused with *nk*, which is represented as two single consonants, 27.

(5) Since numbers that begin with 0 are rarely encountered aside from mathematics, words beginning with *s* or *z* may be treated as though these two consonants did not exist. This rule, however, should be followed only for practical convenience and should never be used by readers who work with figures starting with 0.

All these rules are simple when one realizes that sound—that is, the pronunciation of the word and not its written appearance—is the essential factor. For this reason the

beginner is urged to begin by coding words he hears and not those he sees in print.

Here are some examples, with codes that are simple and present no difficulties:

9 1
bet = 91

7 3
game = 73

5 1 2
litany = 512

7 42 5
kernel = 7425

14
dry = 14

4 2
iron = 42

84 01
frost = 8401

4 9 95 7
republic = 49957

With a little practice it is easy to master this numerical code. In fact, it can be learned in about an hour. The best method is to go into your room or for a walk and ask yourself the numerical value of the various items that catch your eye. For instance, if you see a book, you will know that "book" is 97. If you see a tree, you will know that "tree" is 14. If you see a river, your mind translates it into 484. It is far simpler than it appears at first sight.

The following words may be difficult for a beginner. But if you learn the basic rule—to follow the *sound* and not the appearance of the word—your difficulties will vanish.

Hello is 5, since the initial letter *h* has no code cipher and the double *l* is treated as single *l*.

Warrant is 421, since the *w* has no code cipher and double *r* is counted as 4.

Window is 21, since neither the initial nor the final *w* has any value.

Wing is 7: *w* is not counted, and *ng* is treated as *g*.

Warship is 469: *w* is not counted, and *sh*, a compound consonant, counts as 6.

Heart is 41: *h* is not counted.

Knack is 27: the initial *k* is silent and *ck* has the same sound as *k*.

Lamb is 53: the *b* is silent.

The sound alone is important in this numerical code. This can be demonstrated most clearly by words in which *gh* has different sounds:

Ghost is 701, because *gh* is pronounced like hard *g*.

Enough is 28, because *gh* is pronounced like *f*.

Neighbor is 294, because *gh* is entirely silent.

In the beginning, do not bother too much about the words which you have difficulty in coding. As you become more adept, you will find even the most difficult words rather easy to code. But do not make the mistake of attempting too soon to reverse the process and translate numbers into words. Although this is our final objective, our immediate concern is to learn to translate words into numbers. This is absolutely necessary.

Do not go on to the next section until you have mastered this numerical system so thoroughly that you can rapidly translate into the numerical code any object you observe. The efforts required of you are slight, and as you go on you will find that they are well repaid.

CHAPTER XIV

THE PRACTICAL APPLICATION OF NUMERICAL CODES

I ASSUME that before continuing you will have memorized the numerical code so well that you can substitute numbers for every word you hear or read. But we must remember we did not learn the numerical code in order to express words in numbers, but for the reverse purpose: to remember numbers through words. Everything that has been done up to this point was with this goal in mind.

Taking any word haphazardly, there is only one number-equivalent which is just right. On the other hand, there are a great variety of words which you can translate into this number. This is, as you see at a glance, of extraordinary advantage. It is also the reason why we left the various vowels and the consonants *w* and *h* without any number-value.

Take, for instance, the number 914. You can translate this into the words *poetry*, *battery*, *potter*, *patter*, *powder*, *better*, *betray*, *boudoir*, *butter*, etc. The flexibility of this method is naturally advantageous because of the large number of words which can be so simply formulated for practical purposes.

In everyday life you never note a number for itself alone, that is, without its connection with a fact, a subject or an event. If an event in history is concerned, it means the number belongs to a certain historical occurrence. If a

geographical fact is concerned, the number is to be remembered in connection with the height of a mountain, the length of a river, the population of a town, or the like. If a telephone number, it is in connection with the person whose phone number it is. In every instance, therefore, the number is associated with something else and is meaningless when dissociated from it.

If you had a definite code word for each number, it would sometimes be difficult to establish a connection between the word and the event. Through careful practice you have now attained such facility in making associations that this difficulty should appear very slight. Nevertheless we must not forget that mnemotechny exists to make learning as simple as possible. If we are not restricted to one word alone, if we have a choice among a great variety of words, it is naturally much easier to pick out *the* word with which the number is associated which best fits the fact, event or subject.

In order to make this task easier, I have prepared a little dictionary of numbers, to spare you the trouble of hunting through the big dictionary yourself for a suitable word or digging it up from memory.

So we proceed as follows: Assume you want to remember, or want your students to remember, the year 1914 as the beginning of the World War. First we cross off the initial 1. We can always omit the thousands in historical figures without any danger, since we are not apt to be 1000 years wrong on a historical fact. Striking off the 1 simplifies our task.

For the number 914 the dictionary gives all the words I mentioned earlier and a few more, which we will talk about shortly. From these words we choose, say "battery," since this concept is very easy to tie up with "war." It is easier

for a student to associate the word "battery" with war than to learn the number 1914 by heart. The two concepts—the word "battery" and the number "914"—mean the same to one who knows the numerical code.

Instead of "battery" you may choose "poetry" if you remember how many so-called poems of heroism were written by patriots on both sides at the beginning of the World War.

A partisan of the Central Powers (Germany and Austria) would perhaps prefer the word "butter," because this commodity was scarce soon after the start of the war.

Note that the actual word you choose is a matter of no importance and that you can choose one to suit your individual taste. *This fact shows the superiority of this flexible system which allows the arbitrary insertion of vowels.*

And after you see what great advantages a choice among various words offers in remembering figures, I will give you another method, likewise referring to the dictionary, which expands this choice considerably: *Practical usage has demonstrated that there is no point in translating more than three consonants of a word, naturally the first three, in order to avoid errors. The other consonants we will completely disregard and by so doing we will enhance considerably the number of words at our disposal.*

If we stay with the number 914, besides the words already named, we can use "butterfly," because only the first three consonants are counted and the following consonants *f* and *l* are disregarded. Or we can use the following words to indicate 914: patriot, patron, paternoster, bedroom, buttermilk, petrification, petroleum, putrid, putter, putrescence.

This list does not exhaust the possibilities, but it shows

this method offers such a variety of words that we always have the possibility of finding one which fits the case especially well. With this in mind, if we are to remember the year 1914 as the beginning of the World War, we would presumably prefer the word "patriot" to all the others.

I will try now to present a variety of examples which will show you how this method operates in actual life.

History:

- Battle of Agincourt, 1415—**artillery** (artillery-battle)
- Congress of Vienna, 1815—**fatal** (the results of the congress were fatal for all concerned)
- Magna Charta, 1215—**intellect** (the signing of the Magna Charta was a sign of awakening intelligence)
- Newton discovered gravitation, 1656—**geology** (the magnetic qualities of the earth rest on geologic premises)

Geography:

- The height of Niagara Falls is 571 feet—**liquid**^{5 7 1}
- The area of France is 212,659 square miles—
^{2 1 2 6 5 9}
No town shall bow

Chemistry:

- Gold melts at 1945° F.—**pearl** (pearls—valuable—gold)
- Silver melts at 1760° F.—**cashes** (cash—money—silver)
- Water boils at 212° F.—**intense**.
- Weight of water per cubic foot is 62.5 lbs.—**channel**.
- Weight of sea water per cubic foot is 64 lbs.—**shore**.
- Weight of cast iron per cubic foot is 450 lbs.—**rails**.

Instead of noting the first three consonants of a word, you can form complete sentences and count only the initial consonant of each word. There is a greater possibility of variation in this method and therefore it is easier to apply.

History:

Washington was inaugurated as President in 1789—

First President.

Napoleon became emperor in 1852—**Louis Napoleon.**

Lincoln was assassinated in 1865—**Shot Lincoln.**

Fulton's first steamboat trip was in 1807—**Steamboat came.**

Peary discovered the North Pole in 1909—**Peary saw pole.**

Washington was born in 1732, died in 1799—**Mourn now**

President's passing.

General examples:

Jenny Lind made her New York debut in 1850—**Lind sang.**

The Amazon, the longest river, is 3800 miles—**Most vast.**

One cubic foot equals 1728 cubic inches—**The cubic number of feet.**

Copper melts at 1981° F.—**Ten pennies for a dime** (copper suggests penny).

Lead melts at 621° F.—**Choose new type** (in printing).

Now let us apply this method in memorizing the terms of the Presidents. We have the choice of connecting the substituting word with the President's name or with the substitute word which we gave him in the list of Presidents. It is more difficult to make our connection with the President's name, as that presupposes some knowledge of the man himself. Therefore it is simpler to use the key word as a general rule, though in a few obvious instances, as Jefferson, Lincoln, Taft and Hoover, I have not followed that rule.

In the following example I give the linking words which seem simplest to me, and where it seems advisable I add substituting words for the Presidential date. The Presidential series is repeated here for your convenience:

In *Washington* Adam was jeopardized by a mad monster. Adam and Jack ran to the bureau, but in their hurry they broke a tile or poked a tailor. They filmed more buildings, pierced by a cannon which was linked by John to a grand tree.

The haze over garden and field sheltered Arthur, who cleaved his way in a hurry. He cleaved mockingly as he cried: "A rose taffeta dress will hardly be the right thing in a college; but whoever desires rose veils may wear them."

Now, in learning the dates, we must be careful to select words which have a close connection with each President or with the substituting words in the story. Since it is taken for granted that anyone would know the centuries of the respective presidential terms, we need substituting words for the last two figures only. And as we need concern ourselves only with two figures in each case, it makes no difference how many consonants there are in the substituting words in addition to the initial two.

Here are the key words, with explanatory notes in case they are not clear:

1. Washington 1789 Washington —**fable** (there are many fables about George Washington)
2. Adams 1797 Adam —**epoch** (with Adam and Eve began a new epoch in world history)
3. Jefferson 1801 —**statement** of rights (Jefferson wrote the Declaration of Independence)
4. Madison 1809 mad —**spiteful** (both words have a similar meaning)

5. Monroe	1817	monster	— attack
6. Adams	1825	Adam	— knowledge (the apple from the tree of knowledge)
7. Jackson	1829	Jack	— unbending (Andrew Jackson was unbending)
8. Van Buren	1837	bureau	— mocha (on the bureau is some coffee)
9. Harrison	1841	hurry	— ready
10. Tyler	1841	tile	— hard
11. Polk	1845	poke	— relent or relax
12. Taylor	1849	tailor	— robe
13. Fillmore	1850	film	— lucid or illustration
14. Pierce	1853	pierced	— limb (a limb pierced by a bullet)
15. Buchanan	1857	cannon	— lock
16. Lincoln	1861		— shot (Lincoln was shot)
17. Johnson	1865	John	— jolly (similar to John in sound)
18. Grant	1869	grand	— chap
19. Hayes	1877	haze	— coke (smoke from coke makes haze)
20. Garfield	1881	field	— food
21. Arthur	1881	Arthur	— feat (King Arthur's feats)
22. Cleveland	1885	cleave	— fly or flay
23. Harrison	1889	hurry	— evaporate (moisture evaporates hurriedly)
24. Cleveland	1893	cleave	— boomerang or bomb (it cleaves the air)
25. McKinley	1897	mockingly	— beguile
26. Roosevelt	1901	rose	— sweet (the rose is the sweetest flower)

27. Taft	1909		— supreme (Taft was on the Supreme Court)
28. Wilson	1913	will	— tomb (Unknown Soldier's Tomb)
29. Harding	1921	hard	— nut
30. Coolidge	1923	college	— name or number
31. Hoover	1929		— unhappy (the 1929 crash)
32. Roosevelt	1933	rose	— mama

All of these auxiliary key words have been chosen to be remembered after one or two readings. Thus you can learn the dates for all Presidents in from five to ten minutes; a task which might take you hours in the old-fashioned way of memorizing. And, as a rule, memorized dates vanish from one's mind soon. If you try this out on your circle of friends, you'll find very few who remember their Presidents, even though they must have memorized them for school.

CHAPTER XV

THE BASIC SERIES OF KEY WORDS

THIS subject is one of the most important in the whole study of mnemotechny.

You still remember the series of street names. I assume that since reading it you have practised repeating a series of twenty words, after hearing it once, often enough to have mastered the technique.

Perhaps weaknesses in this series have already occurred to you. We can now proceed to remove them. For me the most serious weakness is the fact that the series goes only to twenty. Of course, we could extend it, but if we do we run the risk of making mistakes or getting mixed up. Indeed, the fact that we can get mixed up is the second weakness of this application of the method. For instance, if we think back along the series of streets that run from north to south on Manhattan, we have no definite way of remembering whether Medical Center was number three or four. So now we will try to correct these weaknesses at one and the same time, by calling the numerical code to our aid.

If we have a series from 1 to 100 and if we know that the word *Europe* falls in this series, the word can be no other than 49. This is a simple combination for *r* and *p* and no error is possible. But although it is extremely easy to translate the word *Europe* into 49, it is not so simple a matter to remember that we chose *Europe* as the key

word for the number 49. We might just as well have chosen another word that also means 49, for instance, Arab, harp, rap, rob, rub, or the like.

Now, how do we know which of these many available words was chosen as key word?

Almost all the published mnemotechnical systems have acknowledged the vast importance of a fixed system of key words for the numbers 1 to 100, but all suffer from this weakness: *100 words must be learned by heart for these numbers*. Again and again the students in my classes have complained about this difficulty and therefore I have sought and finally found a method which corrects this weakness.

I have worked out a method whereby we have at our disposal an unalterable basic series of key words without the necessity of learning a single one of them by heart. Amazing things can be accomplished by this method once you have learned how to put it to work for you.

Our task in this connection is to find auxiliary words in such a manner that we know exactly which word *must* be used for each number without learning any word by heart.

For instance, if we have chosen the word cat for 71, we must be in a position to translate 71 into "cat" after months or years, and not into one of the many other words which the number might represent.

To reach this goal, we shall proceed by using the vowels in their usual order in the alphabet, a, e, i, o, u. In this serial order we insert the vowels between the consonants indicated by numbers until we have found a meaningful word. If none of the vowels will give us a word (which is seldom the case), we use double vowels. With double vowels we try to follow an order which sounds fairly like

a-e-i-o-u. With very few exceptions, this happens only with the numbers from 1 to 9.

But if we make it our goal to build a basic series of key words *which can be reconstructed by every reader without memorizing*, something more is needed. Up to now it was advantageous for us to have several consonants at our disposal for each figure, for instance *t* and *d* and *th* for 1, or *k* and hard *g* and *ng* and hard *c* for 7. But with key words we must decide on one particular consonant, because it is otherwise impossible to recall the exact word in every instance. For this reason we make a definite selection from the available consonants:

We begin all the words from 10 to 19 with *t* (not with *d* or *th*)

from 60 to 69 with *ch*
 from 70 to 79 with hard *c*
 from 80 to 89 with *f*
 from 90 to 99 with *b*

I disregard the words from 20 to 59 at this point, since for the figures 2, 3, 4, and 5 only one consonant is given in the numerical code. There is therefore no choice in the matter. Here, too, we follow phonetics, and doubled letters count as one.

All this sounds theoretical and a bit complicated, and yet in essence it is very simple. Let us take the figures 30 to 39 as an example.

The figure 30 consists of the consonants *m* and *s*. If I insert an *a*, I have *mas*, or, since a double consonant is permissible, *mass*, a word which I can use since it is a noun.

The figure 31 consists of the consonants *m* and *t*. In-

serting the first vowel, *a*, gives us the word *mat*, which again is a noun.

The figure 32 consists of the consonants *m* and *n*. Inserting the vowel *a* gives us the noun *man*.

The figure 33 consists of the consonants *m* and *m*. Inserting the vowel *a* gives us *mam*. For this I substitute *mama*, since the final *a* does not count.

In the same fashion I get:

34—mare

35—mail

36—match

When we come to 37, we can do nothing with the vowel *a*, since *mak* is not a word and *make* is not usually employed as a noun. Therefore I attempt to form a word with *e*, but *mek* too is not a word. With the insertion of *i* I get *mike*, which is so familiar a nickname for microphone that I can use it.

For figure 38, the insertion of the vowels *a*, *e*, *i* and *o* forms no sensible word, so that I have to resort to *u*, and get *muff*.

Figure 39 is again simple, for inserting *a* between the consonants *m* and *p* gives me the word *map*.

In spite of this consistency in building up key words, certain exceptions and questions arise. For instance, one may waver between *light* and *lot* for 51. Theoretically, the vowel *i* precedes the vowel *o*, which indicates that *light* should be chosen. On the other hand, the consonants *gh* in the word *light* might lead to mistakes, in spite of the fact that they are silent. For this reason I have chosen *lot*. For 53 one may hesitate between *lamb* and *lime*, since the *b* in *lamb* is silent. But because I have consistently

tried to choose key words which have as few silent consonants as possible, I gave *lime* the preference. For the same reason I chose *check* instead of *chalk* for 67, and *cuff* instead of *calf* for 78.

The figure 66 is an unavoidable exception, since *j* must be used as the initial consonant and there is no suitable word beginning with *ch*.

By this method we build the following basic series of key words, a series *tremendously important for all mnemotechnical practice*.

I again emphasize the point that the reader who thoroughly understands how the words are constructed, *does not need to learn them by heart*, since he can *reconstruct* each word whenever occasion demands.

This series can be applied in many ways. First of all, with its help we can remember any other word series we choose, up to 100 words. I need merely refer to the method outlined in the chapter covering the street series as the one to employ. With the help of this series of cue words we can deliver any speech extemporaneously and completely dispense with notes. To do this we need only put together the cue words of the address and connect them with the series of key words. Since we are very sure of the latter, we can be sure of the cue words too, if we make a strong enough association with them, and we never run the risk of getting stuck or of not knowing which points in our address are still to be treated.

In the same way the series of key words can be applied when we hear a speech or lecture and wish to remember it more or less in detail. In this instance, while listening to the lecturer, we choose his most important words as cue words and connect them with our series of key words. Then, later on, if we wish to reconstruct the lecture, we

SERIES OF KEY WORDS

- | | | |
|------------------|-----------|-----------|
| 1. tea | 34. mare | 67. check |
| 2. nay | 35. mail | 68. chaff |
| 3. May | 36. match | 69. chap |
| 4. ray | 37. mike | 70. case |
| 5. law | 38. muff | 71. cat |
| 6. Shaw (author) | 39. map | 72. can |
| 7. key | 40. race | 73. came |
| 8. fee | 41. rat | 74. car |
| 9. bay | 42. rain | 75. call |
| 10. tease | 43. ram | 76. cash |
| 11. tot | 44. rear | 77. cake |
| 12. tan | 45. rail | 78. cuff |
| 13. team | 46. rash | 79. cap |
| 14. tar | 47. rake | 80. face |
| 15. tale | 48. reef | 81. fate |
| 16. touch | 49. rap | 82. fan |
| 17. tack | 50. lace | 83. fame |
| 18. taffy | 51. lot | 84. fare |
| 19. tap | 52. lane | 85. fall |
| 20. niece | 53. lime | 86. fish |
| 21. net | 54. lair | 87. fake |
| 22. noon | 55. lull | 88. fife |
| 23. name | 56. lash | 89. fop |
| 24. Nero | 57. lake | 90. base |
| 25. nail | 58. leaf | 91. bat |
| 26. niche | 59. lap | 92. ban |
| 27. neck | 60. chase | 93. beam |
| 28. nave | 61. chat | 94. bar |
| 29. nap | 62. chain | 95. ball |
| 30. mass | 63. chime | 96. batch |
| 31. mat | 64. chair | 97. back |
| 32. man | 65. chill | 98. beef |
| 33. mama | 66. judge | 99. babe |

run through our series of key words, recall the cue words through association, and have the necessary foundation stones.

The basic series of key words must gradually become so familiar that *word and number become identical* for the user. Once you have reached that point, you can easily learn not only any chosen series of words but figures as well.

Now, then, assume you are to remember the following 10 numbers consecutively:

57

66

74

65

60

15

62

76

86

33

The first word in our series of key words is *tea*. The number 57 is to be associated with it. For this number we substitute the key word for 57, *lake*. Therefore we imagine someone sitting by a lake drinking tea. In this connection it is important to *concentrate on the picture* for a few seconds and not let it be a mere passing idea.

The second word of our series of key words is *nay*. The second number to be remembered in the list given above is 66. For this number we substitute the word *judge* from our series of key words, and therefore we must associate *nay* with *judge*. The association is simple—we imagine a judge saying “Nay” to a plea.

The third word in the series of key words is May. The third number to be remembered is 74, car in the series. As an association I suggest we picture a drive in a new car on a fine May morning. In doing so you need not fear confusing the month of May with another month. You must not forget that May is the only month in the series of key words. So confusion is impossible, even aside from the fact that in forming your association your starting point is not car but the key word May. If we proceed in this fashion we get the following connections, for which I add possible associations in parentheses. These associations are, of course, not binding, for the reader should try to find associations which are better and more pertinent for him individually:

1. tea —lake (57) A man sits by a lake drinking tea.
2. nay —judge (66) The judge says nay to the plea.
3. May —car (74) We drive in a new car on a May morning.
4. ray —chill (65) The chill was dispelled by the rays of the sun.
5. law —chase (60) The policeman chases the law-breaker.
6. Shaw —tale (15) Shaw wrote tales as well as plays and essays.
7. key —chain (62) The key hung on a chain.
8. fee —cash (76) Fees are paid in cash.
9. bay —fish (86) Fish swim in the bay, or people fish in the bay.
10. tease —mama (33) Mama teases her child, or the child teases his mama.

If you proceed in this way it is not hard to remember a series of 100 numbers of 2 digits. Of course, you should

not and must not attempt this time-consuming task all at once; restrict yourself to 20 or 30 numbers for a start. Practice of this sort, which should not take more than 15 or 20 minutes, is an *extraordinarily good exercise in concentration*. It forces the student to think *definitely*, therefore really to *concentrate* on the key word and its associated word. Even momentary lack of attention finds its revenge: the attempt to recall the connected word fails, because the association was not impressed deeply enough on the mind. But if you repeat, without errors, some 20 or 30 numbers, you may be sure you *have improved your powers of concentration and therefore your memory considerably*.

One more word about the objections which have been raised against the series of key words. Occasionally it is asserted that numerical codes, a series of key words, etc., impose too great a task on our thinking apparatus and are too time-consuming in application. To this charge we can reply that all these may easily be acquired in 8 or 10 hours, and that this time is negligible when compared with the facility and ease we attain in remembering. *Stenography offers the best analogy*. In learning it, the student must first of all memorize characters and outlines, but after that shorthand is a time-saver for everything that must be written down. In the same way, *mnemotechny is an aid to everything that must be kept in mind*.

CHAPTER XVI

REMEMBERING NUMBERS OF THREE TO SIX DIGITS

IF you have had trouble in mastering the system which I have outlined up to this point, you can skip this chapter. But if you find it easy to form associations and have practised it to some degree, you will find it worth while to learn this method of remembering larger numbers.

Let us begin, for the moment, with 4-digit numbers. The first question is: Will our basic series of key words meet the situation? Let us test it. Assume the telephone number of my friend Smith is 4295. In our basic series of key words 42 is *rain* and 95 is *ball*. To remember the number I should picture my friend Smith playing ball in the rain.

After enough practice in forming associations, this picture will, unquestionably, recur to me when I try to recall Smith's phone number. But here we encounter a difficulty. Assume the telephone number is 9542 instead of 4295. We would form the same mental picture, for we could not form any other than that of Smith playing in the rain if we utilized the basic key words. The picture, then, can mean 4295 or 9542.

We must therefore find a corrective. For every word in the basic series of key words we write another, whatever immediately occurs to us. This word need not agree with the numerical code, since its place in the series is deter-

mined by its close association with the respective basic key word.

If we begin with the first word in our basic series of key words and think of *tea*, most readers will think of *cup*, for the concept "a cup of tea" is a familiar one. But with many of the key words, the words that come to mind will vary with the individual, and will be different from those that occurred to me. That brings up an important rule: While it is desirable not to vary the words in the basic series of key words, it is not at all necessary to keep this secondary series unchanged. Therefore, you may add to the basic key words whatever words occur to you in connection with it rather than merely accept the ones I have chosen. But be careful to use nouns, and whenever possible concrete nouns, because it is easiest to form a connection with them. But when you have made your choice you must stick to it thereafter.

While, in this case, it is unnecessary to list a secondary series, I will give you one because in a later chapter I am giving you a parlor game based on this secondary series. For this purpose I have not always chosen the simplest and most obvious words, but only those which may be used in a room where tables are laid out for a party. I have also added my associations for the reader if he is interested. The secondary series of words reads:

- | | | |
|---------|---------|---|
| 1. tea | —cup | (a cup of tea) |
| 2. nay | —ballot | (on a referendum ballot you vote
yea or nay) |
| 3. May | —pole | (Maypole) |
| 4. ray | —bulb | (an electric bulb emits rays) |
| 5. law | —ruler | (a good ruler enforces the law) |
| 6. Shaw | —book | (Shaw wrote many books) |

- | | | |
|-----------|------------------|--|
| 7. key | —pencil | (She carried her key and a pencil in her bag) |
| 8. fee | —bill | (The fee is added to the bill) |
| 9. bay | —water | (There is water in the bay) |
| 10. tease | —trick | (To tease a person you play a trick on him) |
| 11. tot | —doll | (The tiny tot has a doll) |
| 12. tan | —leather | (Some leather is tan in color) |
| 13. team | —game | (The team played a game) |
| 14. tar | —feather | (Tarred and feathered) |
| 15. tale | —letter | (The letter told a tale) |
| 16. touch | —material | (By touch you can tell the kind of material) |
| 17. tack | —pin | (Tacks and pins are somewhat similar) |
| 18. taffy | —candy | (Taffy is a kind of candy) |
| 19. tap | —beer | (You can draw beer from a tap) |
| 20. niece | —picture | (A picture of my niece) |
| 21. net | —veil | (A net veil) |
| 22. noon | —watch | (My watch tells me it is noon) |
| 23. name | —visiting card | (My name is on my visiting card) |
| 24. Nero | —cigaret lighter | (Nero burned Rome. Fire reminds me of cigarette lighter) |
| 25. nail | —file | (A nail-file) |
| 26. niche | —vase | (The vase is in a niche) |
| 27. neck | —tie | (necktie) |
| 28. nave | —ring | (In the nave the bridal couple exchanged rings) |
| 29. nap | —napkin | (Nap and napkin are similar in sound) |
| 30. mass | —candle | (Candles are burned at Mass) |
| 31. mat | —rug | (They are alike) |
| 32. man | —cigar | (The man smokes cigars) |

- | | | |
|-----------|----------------|---|
| 33. mama | —jewelry | (Mama wears jewelry) |
| 34. mare | —whip | (Mare and whip belong together) |
| 35. mail | —stamp | (Mail and stamp belong together) |
| 36. match | —box | (Matchbox) |
| 37. mike | —radio | (Belong together) |
| 38. muff | —glove | (In winter one wears gloves and a muff) |
| 39. map | —calendar | (A map and a calendar hang on the wall) |
| 40. race | —notebook | (At a horse race one needs a book to note the winner) |
| 41. rat | —comb | (She combed her hair over a rat) |
| 42. rain | —umbrella | (In the rain you need an umbrella) |
| 43. ram | —tobacco | (Tobacco is rammed in a pipe) |
| 44. rear | —bookend | (Rear and end have a similar meaning) |
| 45. rail | —metal | (Rails are made of metal) |
| 46. rash | —food | (Rash sounds like rasher—a rasher of bacon is food) |
| 47. rake | —tool | (A rake is a tool) |
| 48. reef | —cord | (Reef—cable—cord) |
| 49. rap | —cane | (A rap with a cane) |
| 50. lace | —handkerchief | (The lace on a handkerchief) |
| 51. lot | —money | (A lot of money) |
| 52. lane | —stone | (The lane is paved with stone) |
| 53. lime | —fruit | (The lime is a fruit) |
| 54. lair | —flashlight | (The lair is in a cave; to see in the cave you need a flashlight) |
| 55. lull | —pillow | (During a lull in activity you rest on a pillow) |
| 56. lash | —ashtray | (Similar in sound) |
| 57. lake | —bathing dress | (To swim in the lake you need a bathing dress) |

- | | | |
|-----------|--------------|---|
| 58. leaf | —flower | (Leaf and flower belong together) |
| 59. lap | —handbag | (A woman puts her handbag on her lap, for instance in the movies) |
| 60. chase | —silver | (Silver is sometimes chased) |
| 61. chat | —lipstick | (Chat—lady—mouth—lipstick) |
| 62. chain | —string | (Chain and string are similar) |
| 63. chime | —bell | (The chime of the bell) |
| 64. chair | —furniture | (A chair is a piece of furniture) |
| 65. chill | —ice | (Chill and ice belong together) |
| 66. judge | —inkstand | (On the judge's desk is an inkstand) |
| 67. check | —pen | (You write a check with a pen) |
| 68. chaff | —bread | (chaff—wheat—flour—bread) |
| 69. chap | —cigaret | (The young chap smokes cigarets) |
| 70. case | —folder | (A case and a folder both are used to hold valuable papers) |
| 71. cat | —fur | (cat fur) |
| 72. can | —spoon | (The fruit is taken from the can with a spoon) |
| 73. cam | —wheel | (Belong together) |
| 74. car | —card | (Similar in sound) |
| 75. call | —telephone | (Telephone call) |
| 76. cash | —coin | (Coins are cash) |
| 77. cake | —beverage | (With cake you need a beverage) |
| 78. cuff | —button | (Cuff-button) |
| 79. cap | —hat | (Caps and hats are similar) |
| 80. face | —compact | (A compact is used for the face) |
| 81. fate | —telegram | (Telegrams often determine one's fate) |
| 82. fan | —thermometer | (A fan is used when the thermometer is high) |
| 83. fame | —medal | (A man of fame often wears medals) |

84. fare	—ticket	(You get a ticket when you pay your fare)
85. fall	—nut	(Nuts ripen in the fall)
86. fish	—fork	(Fish are eaten with a fork)
87. fake	—gold	(Don't let that faker sell you a gold brick)
88. fife	—musical in- strument	(The fife is a musical instrument)
89. fop	—mirror	(The fop looks in the mirror)
90. base	—wood	(The base was made of wood)
91. bat	—sports	(The bat is used in several sports)
92. ban	—playing card	(In some localities there is a ban on playing cards)
93. beam	—pipe	(When he smokes his pipe he is beaming)
94. bar	—glass	(There are glasses on the bar)
95. ball	—rubber	(Most balls are made of rubber)
96. batch	—newspaper	(A batch of newspapers)
97. back	—apparel	(You buy apparel for your back)
98. beef	—knife	(To cut beef you need a knife)
99. babe	—toy	(The baby has a toy)

This secondary series can be remembered easily after one or two readings. The underlying principle for learning figures of four digits is as follows: The basic series of key words always comes first; therefore it is used for the first 2 digits of the number. The secondary series always comes second; therefore it is used for the last 2 digits of the 4-digit number. If the telephone number of my friend Smith is 4295, it is not translated by rain and ball, but by *rain* and *rubber*, since for the first 2 digits (42) the basic key word is chosen and for the second 2 digits (95) the word from the secondary series. Since rubbers are worn in the rain, the picture is easy to remember.

If his number were 9542, the words would be *ball* and *umbrella*, for the number 42 is now in the second place and consequently the secondary series is used for it. A picture of my friend Smith with a ball in one hand and an umbrella in the other strikes me as so ridiculous that I remember it.

This method prevents you from getting mixed up. By using a secondary series we can recall numbers of 4 digits as readily as we have heretofore recalled numbers of 2 digits with the aid of the basic series of key words.

Now let us turn to the problem of remembering 5 and 6 digit numbers. Here the difficulty lies in attempting to make 2 concepts do, as in 4-digit numbers, since 3 concepts would make remembering considerably more difficult, besides causing difficulties in sequence. But if we want to recall 5- and 6-digit numbers through 2 concepts, the task presupposes the ability to recall 3-digit numbers with 1 concept. For this our previous aids are insufficient.

If, by the method outlined above, we wanted to remember 759, for example, we could have recalled that the key was in the handbag. But we would have two pictures for the 3-digit number. Therefore we would have 3 or even 4 pictures for a 5- and 6-digit number, a condition we wish to avoid.

We can eliminate this difficulty by using adjectives. We memorize:

- | | |
|----------|-----------|
| 1. thick | 6. short |
| 2. new | 7. coarse |
| 3. mild | 8. fine |
| 4. round | 9. pretty |
| 5. long | |

Each of these adjectives, as you see, begins with a consonant corresponding to the numerical code. Also each adjective can, in the majority of cases, be used with a noun.

Now, if we want to remember a 3-digit number, the use of the adjective is simple. 162 is a *thick chain*; 274 is a *new car*; 438 is a *round muff*; 625 is a *short nail*; 911 is a *pretty tot*.

Should an adjective, in an exceptional case, not fit the noun with which it is to be associated, there is no reason why you should not choose another starting with the same consonant. For instance, instead of using *long* for 5 you can use *light* or *loud*. As long as we are working solely with 3-digit numbers (not with 5 or 6 digits), it does not matter whether we use the basic key words or the secondary key words. The concept *new handkerchief* gives us the number 250 as readily as does *new lace*.

But when we turn to 5- and 6-digit numbers it is another matter. This task, to be sure, is not a common one in everyday life; nevertheless, we should consider it here from a mnemotechnical point of view, if only because telephone numbers often run to five figures. And theoretically it presents no difficulties, for it is merely a question of combining the methods outlined for numbers of 3 and 4 digits. For 5-digit numbers, take the basic key word for the first 2 figures, the adjective for the third figure, and the secondary-series word for the last 2 figures. For instance,

3 3 9 5 8
33958—a mama with a pretty flower

6 9 5 4 9
69549—a chap with a long cane

Numbers of 6 digits are treated in the same way. Two adjectives must be used and these two adjectives must

come first and third, while the basic key word stands in second place, and the secondary-series word in fourth. Applied to figures, this means:

Hundred thousands—first adjective
 Ten thousands and thousands—basic key word
 Hundreds—second adjective
 Tens and units—secondary-series word

Examples:

9 20 4 89
 920,489—a pretty niece looks in a round mirror

6 15 2 96
 615,296—a short tale in a new newspaper

In conclusion I should like to call your attention again to the difference between this method and that of hunting up new help words not on our two lists. The methods proposed here are to be used when we want to impress a particular number on our minds *quickly*, that is, when we have no time to think up more fitting words. For instance, if someone gives us his telephone number just as he hurriedly leaves us on the street, we can remember it with the help of the basic and secondary series, because they are always ready for use. But if the matter is one of numbers which we wish to remember for a long time, we take the trouble of hunting up new help words that fit the fact or person as closely as possible, and ignore the basic and the secondary series. Merely hunting for the help word is a prop for the memory, and experience proves that help words which one has found with some difficulty are apt to remain in the memory better than those taken from a glossary of numbers.

CHAPTER XVII

MNEMOTECHNICAL GAMES

You can now repeat without error a series of 100 or 200 words and figures after having heard them once, and you can also effortlessly call any chosen word or number out of its proper order. In addition, you have read short summaries of several cases showing practical application in all sorts of fields of study and in everyday life.

Before going on with the serious study of mnemotechny, I would like to demonstrate to you some of its amusing possibilities. By way of review, therefore, of what you have already learned, I am going to introduce you to some entertaining parlor games which you will find it interesting to try out on your friends.

But stimulating and enjoyable as these games are, I should not introduce them at this point if I had no serious reason for doing so. As a matter of fact, these games develop your powers of concentration. Every exercise in mnemotechny is in the final analysis an exercise in concentration, no matter for what reason it is undertaken.

One of the most interesting games that can be played with the aid of mnemotechny, and one that baffles the uninitiated spectator, is so-called "mind reading." *It naturally has nothing to do with actual telepathy.* It is merely the application of what we have already learned.

This game presupposes that you instruct one other person in the system outlined in this book. You both know

key words and secondary series. So you both know that 91 is sports.

In other words, if you were to call out number 91 to your partner, he would answer sports. But such a stunt would be too obvious to all those present and we shall therefore try to change it so that it will lose its transparency. This is not difficult. It can be done as follows:

Instead of calling out "91" you can call "9...1."

Instead of "9...1" you can say "p,t."

And instead of saying "p,t," you can form a sentence in which the first two words begin with the consonants *p* and *t*. For instance, "Please tell me what I have in my hand." Your partner knows he must pay attention only to the initial consonant in each of the first two words and that the rest of the sentence is a matter of no consequence to him. So he pays attention to "Please tell" only and takes the consonants *p* and *t*. He knows that these mean 9...1 and therefore 91, and he knows, in addition, that the number 91 in the secondary series is sports. With this information he can answer your apparently artless question with the correct name of the object you hold in your hand.

In this case your task is somewhat more difficult than your partner's, for you must word your question, seemingly casually, in such a way that the first two words have the right initial consonants. Your partner's task is simpler. He need know only the secondary series in order to give the correct answer immediately. And, you see, the secondary series contains practically all the words necessary for a social gathering. Since those present invariably hold out a great number of objects when you ask for them, you always have the opportunity to choose acceptable things and disregard those not listed in our secondary series.

In order to avert any misunderstanding in formulating

questions, here are a few additional examples: "Can you tell what I have in my hand?" would mean 71. The second word, "you," consists of vowels and is therefore not counted. For the same reason, "Can you please tell me . . ." means 79.

"May I ask you . . ." would be 30.

"Let me know . . ." is 53, etc.

With a little practice you will not find it difficult to construct questions using numbers from 1 to 100.

Furthermore, this very pleasant little game is not confined to objects in our series, but can be extended in the same way to other things, such as coins and cards.

In the case of coins, the game revolves around their value as well as their date of coinage. For their date you naturally think of our old mnemotechnical principle of simplification and confine yourself to the last two ciphers. Mistakes will not occur, for if the last two ciphers are greater than 39, the coins have been minted in the previous century, that is, in the 1800's. If they are below 40, their date begins with 1900. As an example:

"Please can you tell me the date of this coin!" means 1897. The words "Please can" give the initiated the figures 9 and 7, or 97. The 18 he can of course supply himself and reach 1897.

The question "Now give me the date on this coin," means "n,g," therefore 27. The completion of the date with 19 is a matter of common sense, since coins minted in 1827 are no longer in circulation. So the person asked can safely supply the answer 1927.

In a similar way, the initiated can play this mnemotechnical question-and-answer game with playing cards. To play this game, you assign the suits in bridge order: spades,

hearts, diamonds, clubs. Spades—1; hearts—2; diamonds—3; clubs—4.

The questions are then put after the same fashion as in the examples for objects and coins. The initial consonant of the first word tells the suit; the initial consonant of the second word, its value. The 10 for our purpose becomes 0 and the ace becomes 1. Therefore the question:

“Now let me know what this card is,” means the 5 of hearts (hearts, 5) for *n* is 2, therefore hearts, and *l* is 5.

If we want to make a point of asking about the face cards, we can allot certain fixed values to them, too. For instance, the Jack—2, Queen—3, King—4. In order to differentiate these values from the same numbers allotted to the numbered cards, we introduce the question with a certain word, agreed upon between the two partners. For instance, the word “*attention*” is good.

The question, “Tell me what card I have in my hand,” is the 3 of spades. “**Attention**, tell me what card I have in my hand,” would be the queen of spades.

I should like to call attention to the fact that this little game has a dangerous side to it, for similar methods are used by experienced card-sharpers to inform partners which cards to lead. Remember that the information need not be given in the form of a question and that it need not be related to the cards themselves. For instance, if a player makes the apparently casual remark: “My telephone has been out of order,” his partner understands he is to lead the ace of diamonds. The *M* in “My” tells him the suit, diamonds, and the initial consonant *t* in “telephone,” the ace.

So be on your guard against card-sharpers, for, like everything else that is good, mnemotechny can be used for evil purposes.

CHAPTER XVIII

THE KNIGHT'S MOVE IN CHESS WITH MNEMOTECHNICAL AID

THE knight's move in chess presents an interesting problem, almost impossible to solve without mnemotechnical aid. The problem is to move the knight—from any given square—over the entire chessboard in such a way that he lands on each square once and only once. Before we begin, I call your attention to the fact that for this problem a knowledge of chess is not necessary. The person who does not play the game can solve it as readily as the world's chess champion.

Even for the most experienced player the moves would be quite difficult to remember without mnemotechnical aid, with the chessboard before him. He would find the solution of the problem almost impossible without the board, if he were playing "blind," as we call it. But with the aid of the mnemotechnical method this seemingly impossible problem is comparatively easy.

We assume that the squares on the chessboard are numbered, as usual, from 1 to 64. In the actual solution it makes no difference where we begin with our numbering. Suppose we start at the lower left-hand corner. The board will look like the diagram on the next page.

Our problem is to keep these 64 squares in mind in a definite serial order, at the same time using the knight's move. Naturally we shall use our familiar method of

employing help words, and substitute consonants for the numbers. Theoretically, we could use the basic key words. But since these 64 squares always remain in the same order for this problem, and as the matter is a particular problem, it is more to the point to use words which fit together in meaning in such a way that we can easily make up a little story about them.

57	58	59	60	61	62	63	64
49	50	51	52	53	54	55	56
41	42	43	44	45	46	47	48
33	34	35	36	37	38	39	40
25	26	27	28	29	30	31	32
17	18	19	20	21	22	23	24
9	10	11	12	13	14	15	16
1	2	3	4	5	6	7	8

In doing so, pay attention to the following: Since a chessboard never has more than 64 squares, numbers above 64 can never occur. Therefore we can use longer words if we wish, knowing that in this particular case only the first or the first two (never the first three) consonants count.

But for Squares 1 to 6 we can use words *with one consonant* only: otherwise we could not know whether to count one or two consonants.

I shall now list the series, which should not take more than one hour to learn, if you use the little story which

follows it as an aid. To each word I have added the number on the chessboard, although I am sure that most of my readers will not need it.

1. The	(1)	33. dice	(10)
2. Dover	(18)	34. Nick	(27)
3. home	(3)	35. took	(17)
4. time	(13)	36. more	(34)
5. carrying	(7)	37. ripe	(49)
6. enormous	(24)	38. help	(59)
7. importance	(39)	39. lemonade	(53)
8. leisure	(56)	40. Shamrock	(63)
9. China	(62)	41. rafters	(48)
10. loin	(52)	42. mad	(31)
11. olives	(58)	43. touch	(16)
12. hearts	(41)	44. shifting	(6)
13. enjoy	(26)	45. and	(21)
14. upon	(9)	46. moved	(38)
15. table	(19)	47. roar	(44)
16. wine	(2)	48. noble	(29)
17. dinner	(12)	49. Irishman	(46)
18. nine	(22)	50. homage	(36)
19. makes	(37)	51. misled	(30)
20. nice	(20)	52. Earl	(45)
21. meal	(35)	53. nephew	(28)
22. only	(25)	54. rumored	(43)
23. Rhenish	(42)	55. mumbled	(33)
24. liqueur	(57)	56. lass	(50)
25. lady	(51)	57. choose	(60)
26. shied	(61)	58. Oloroso	(54)
27. lowly	(55)	59. Sherry	(64)
28. irresponsible	(40)	60. rake	(47)
29. number	(23)	61. moaned	(32)
30. of	(8)	62. Tilly	(15)
31. tried	(14)	63. low	(5)
32. her	(4)	64. estate	(11)

These words can be put together to make the following little story:

CHESS STORY

1 18 3 13 7
The Dover Mail was delivered home on time, carrying news
24 39 56
of enormous importance of the leisure party we had attended
62
on a China-bound ship.

52
It told how we dined on a loin of pork surrounded with
58 41 26 9 19
olives and hearts of celery, which we enjoy, upon the table.
2 12 22 37
We had wine with dinner at nine o'clock, which always makes
20 35 25 42
a nice meal complete, and only missed our favorite Rhenish
57
liqueur.

51 61 55 40
After the dinner, a certain lady shied from a lowly, irrespon-
23 8
sible youth who had had a number of drinks; then, unmoved,
14 4 10 27 17 34 49
she tried her luck at dice. Meanwhile, Nick took more ripe
59 53 63
fruit to help make some lemonade. A Shamrock tied to the
48 31 16 6 21 38
rafters added a mad touch to the shifting scene and moved
44 29 46 36
everybody to roar with laughter. A noble Irishman paid homage
30 45 28 43
to a misled Earl who was his nephew, it was rumored. Then
33 50 60 54
he mumbled to a lass to choose between a glass of fine Oloroso

64

47

32

Sherry and himself. He was a rake indeed, and moaned that
 his wife Tilly was of low estate, but beautiful nevertheless!

Let me again call your attention to the fact that it is not necessary always to start with Square 1. The knight can return from final Square 11 (estate) to initial Square 1 (the). Therefore you have a linked chain. When you demonstrate this problem, you can start on any square your audience chooses. If you should be asked to start on Square 44, for instance, you know that Square 44 is "roar." So begin in the middle of the story with "roar," follow it to the end, start at the beginning and continue it until you come again to the word "roar," which in this instance would conclude the tale.

	a	b	c	d	e	f	g	h	
8									8
7									7
6									6
5						f5			5
4									4
3									3
2									2
1									1
	a	b	c	d	e	f	g	h	

Occasionally the squares on a chessboard are not numbered consecutively but in some other fashion. Sometimes the squares are lettered *a* to *h* vertically, and 1 to 8 horizontally. Each individual square is then designated with a letter and a number, so that you have Square *f5*, for instance, where row *f* crosses row 5. Then the chessboard looks like the diagram on page 144.

Now if we take a word that has *f* as its *first letter* and substitute *l* for 5, according to our numerical code, we can use these words for Square *f5*: "full, fall, fellow." But since in this system no number can occur higher than 8, the code word can have as many consonants as you like. We know, of course, that only that consonant counts which indicates the horizontal row, while the first letter in the word, whether consonant or vowel, indicates the vertical row. For "*f5*" therefore, aside from the three words given above, we can use all other words which begin with *f* and in which *l* is the immediately succeeding consonant, no matter how many other consonants follow; for instance, *flood*, *flight*, *falter*, *flotilla*, *flounder*, *flora*, etc. Since many chess players prefer this designation of the squares, I offer another series, which solves the problem in the same way, with different terminology:

1. At	(A1)	11. beaver	(B8)
2. bumblebees	(B3)	12. ashamed	(A6)
3. cat	(C1)	13. barbaric	(B4)
4. endeavored	(E2)	14. and	(A2)
5. gather	(G1)	15. compassion	(C3)
6. himself	(H3)	16. buttercups	(B1)
7. glee	(G5)	17. dandelions	(D2)
8. hog	(H7)	18. famous	(F3)
9. favorite	(F8)	19. elated	(E5)
10. doggie	(D7)	20. dumb	(D3)

21. calamity	(C5)	43. handy	(H2)
22. Arbutus	(A4)	44. fatigued	(F1)
23. bashful	(B6)	45. embarrassed	(E3)
24. affair	(A8)	46. flash	(F5)
25. chuckled	(C7)	47. dash	(D6)
26. everywhere	(E8)	48. Early	(E4)
27. giggled	(G7)	49. fashion	(F6)
28. hilarity	(H5)	50. doleful	(D5)
29. game	(G3)	51. forgiveness	(F4)
30. had	(H1)	52. each	(E6)
31. fun	(F2)	53. dear	(D4)
32. ditty	(D1)	54. cache	(C6)
33. bonbons	(B2)	55. all	(A5)
34. carrots	(C4)	56. back	(B7)
35. ambition	(A3)	57. deftly	(D8)
36. balanced	(B5)	58. fact	(F7)
37. acorns	(A7)	59. hive	(H8)
38. coffee	(C8)	60. gushed	(G6)
39. éclairs	(E7)	61. hear	(H4)
40. gave	(G8)	62. gentle	(G2)
41. hedge	(H6)	63. edict	(E1)
42. garden	(G4)	64. conduct	(C2)

These words can be assembled into the following little poem:

CHESSBOARD POEM: A NURSERY RHYME

A1	B 3	C1
At the bumblebees' hive a little cat		
E 2	G1	
Endeavored to gather some honey;		
	H 3	
So wrapt up in himself was he,		
G5		
His glee was really funny.		

H 7 F 8
The hog came by, his favorite friend,

D 7
And the little doggie, too;

B 8
The beaver also heard the news

And came to get the view.

A 6
The little kitten was ashamed

B 4
Of his own barbaric action,

A 2
And kittens are so proud, you see,

C 3
He was filled with great compassion.

B 1 D 2
The buttercups and dandelions,

F 3
Famous for their vanity,

E 5
Were much elated at the tale

D 3 C 5
Of dumb pussy cat's calamity.

A 4 B 6
Arbutus was not bashful, and,

A 8
When she heard of the affair,

C 7
She chuckled so at pussy's woe

E 8
She told it everywhere.

USE YOUR HEAD

G 7

All who heard it giggled,

H 5

It created much hilarity.

G 3

They made such game of pussy's shame,

H 1 F 2

They had fun at his disparity.

D 1

B 2

C 4

They then wrote a ditty of bonbons and carrots,

A 3

B 5

Ambition, and a balanced diet,

A 7

C 8

E 7

Of acorns and coffee and eclairs and such . . .

G 8

Which they gave to the kitten to try it.

H 6

G 4

H 2

Near a hedge in the garden the handy puss,

F 1

E 3

Fatigued and quite embarrassed,

F 5

D 6

With a flash and a dash knew his action was rash

E 4

Early realized why he was harassed.

F 6

D 5

The little cat, in fashion doleful,

F 4

Forgiveness now desired.

E 6

To each of his friends to make amends,

D 4

Dear pussy cat was inspired.

C 6 A 5 B 7
 His cache of honey all gave back
 D 8
 As deftly as it was taken.
 F 7 H 8 G 6
 In fact, at the hive, he gushed as he strived

 To show they had been mistaken.

H 4 G 2 E 1
 Hear, gentle kittens, this edict wise:
 C 2
 (In conduct or conversation)

 "Honesty the best policy is,"

 To maintain a good reputation.

HILDRETH FIELDS

No matter which of these two methods you use, this very puzzling experiment is rather easy to carry out. You can even risk a modest bet with members of your audience, wagering that no one can imitate you, for without mnemotechnical aid the experiment is practically impossible.

This second method outlined for the knight's move in chess can be applied in practical everyday life, in fact in chemistry. Chemical formulas are put together in somewhat the same fashion as the squares on a chessboard, since they consist of letters and numbers. If we apply the same method, we can find several help words for every chemical term, and can memorize every formula, even a complicated one, by making the words fit the formulas and using them in little stories.

CHAPTER XIX

REMEMBERING DATES AND RECKONING THE DAY OF THE WEEK

OCCASIONALLY in everyday life it is necessary to remember not only a certain year but even a specific date. In such instances, however, we can assume that the century is always so well-known that it need not be recalled. If a certain day is so important that you want to keep the exact date in mind, you can hardly be in doubt about the century to which it belongs.

Our task, therefore, is to combine in some way the month, the day of the month, and the last two figures of the year. Combining two 2-figure numbers presents no difficulty, for we have a basic series and a secondary series of words at our command. But what shall we do about the third number? The nine adjectives, representing the figures from 1 to 9, which we have already learned, can be used for the months from January to September, inclusive, so that April, the fourth month, will be replaced by the adjective *round*. Then all we have to do is to add three more adjectives for the figures 10, 11, and 12, that is, the months October, November and December. These adjectives must produce the figures 10, 11 and 12 when we translate their consonants into numbers. For instance:

10. various adjectives that begin with **dis**: discolored, discovered, etc.

11. *tight*

12. *thin*

If we always substitute the *adjective for the month*, the word from the basic series of key words for the day of the month, and the word from the secondary series for the year, no confusion will ever arise.

September 11, 1872, is translated as follows:

September, the 9th month, is *pretty*.

11 in the basic series of key words is *tot*.

72 in the secondary series of words is *spoon*.

September 11, 1872, therefore is: *A pretty tot with a spoon*.

Another example: December 25, 1890:

December, the 12th month, is *thin*.

25 in the basic series of key words is *nail*.

90 in the secondary series is *wood*.

December 25, 1890, is therefore: *A thin nail in wood*.

There is a variant for this method which you may prefer. We are accustomed to associate some quite definite thing with each month, that is, we have a symbol in mind for each month, usually the same for the majority of people. For instance, everybody thinks of Christmas in connection with December and consequently of the symbol *Christmas tree*. By using these symbols we can dispense with the adjective and substitute the particular symbol for the month. The example given above would then read: December 25, 1890: *Christmas tree—nail—wood*. This combination is easy to remember since a Christmas tree is often nailed to a wood stand.

I shall return later to the symbols for the various months,

but at this point I want to urge you to choose your own symbols. For instance, if a person was born in December, he will find himself a better symbol than the tree. The choice in this instance resolves itself into a practical matter determined by individual factors. I naturally had to rely on my general knowledge of the average man in choosing my symbols.

In any case, remember that in this system *the serial order of the concepts is of no importance*:

The adjective or the symbol is *always* the month.

The basic series of key words is *always* the day of the month.

The secondary series of words is *always* the year.

In connection with this method for remembering dates, I want to give you also a simple way of reckoning dates, that is, a method by which it is possible to determine the day of the week for any date you choose, even though it be several centuries in the past.

What I have repeated so often in this book is again true: without mnemotechny this task is very difficult; with mnemotechnical aid it is comparatively easy.

First we give each month a special number, which has nothing to do with the calendar. For remembering them I shall later give you mnemotechnical aid. These numbers are:

January	4	July	2
February	0	August	5
March	6	September	1
April	2	October	3
May	4	November	6
June	0	December	1

Then we number the days consecutively, beginning with Sunday:

Sunday	1
Monday	2
Tuesday	3
Wednesday	4
Thursday	5
Friday	6
Saturday	7

If we continued numbering, with 8 we would come again to Sunday; 9, Monday; 10, Tuesday, etc. At 15 we should again have Sunday and once more at 22. From this we conclude we may discard the number 7 and every multiple of 7, without affecting our computations. For instance, 37 is 2, because the number 37 equals 5 times 7 plus 2. In other words, if at 1 we start with Sunday and number the days consecutively, at 37 we reach Monday. We can simplify the matter by disregarding five times seven (the multiple of 7) and merely use the remainder 2, which is Monday.

We use the same method both for the day of the month and the year. For the months, we use the numerical code given above.

But so far we have completely disregarded the century. For instance, if we had April 10, 1822, our computation would run as follows:

April (according to the code given above)	equals	2
10 equals seven plus three (disregarding the 7 for reasons given above)	"	3
The year 1822 (leaving the century out of our reckoning) equals 22; 3×7 plus 1	"	1
	Total	<u>6</u>

That gives us the sixth day, or Friday.

But this result is not correct, because up to now we have not considered the leap years. To reckon correctly,

we divide the last 2 figures of the year (the century is again disregarded) by 4 and add to it the result attained so far. Completely disregard any remainder. So we say: 22 divided by 4 equals 5 (the remainder 2 does not count) and add this 5 to the total of 6. We get 11, and since we can always drop 7, the result is 4. *This is a Wednesday.* We have reckoned quite correctly. *April 10, 1822, was a Wednesday.*

Suppose the date to be March 13, 1891. Then—

March, according to our code for the months	equals	6
13 equals 7 plus 6, therefore	"	6
91 equals 13×7 (no remainder)	"	0
91 divided by 4 equals 22 (disregard the remainder)		
22 equals 3×7 plus 1, therefore	"	1
	Total	$\overline{13}$

13 equals 7 plus 6; 6 is Friday

Therefore March 13, 1891, was a Friday

And now we come to a general exception: *January and February must always be reckoned with the preceding year.* For instance, February 10, 1939, must be reckoned as though it were February 10, 1938. Example:

President Franklin D. Roosevelt was born Jan. 30, 1882.

January	equals	4
30 equals 4×7 , remainder 2	"	2
1882, reckoned as 1881, because the date falls in		
January; 81 equals 11×7 , remainder 4	"	4
81 divided by 4 equals 20. And 20 equals 2×7 plus		
6, therefore	"	6
	Total	$\overline{16}$

16 equals 2×7 , remainder 2; 2 equals Monday

President Roosevelt was born on a Monday.

But the century cannot always be disregarded, as in the case of the nineteenth century. In the present century, the twentieth, we must add the number 5, after we have carried the computations to this point; and there are four of these arbitrary numbers to remember.

The following general rule holds true:

If the first 2 figures of the century can be divided by 4 (for instance, 16—), we add 4. For the following century (17—) we add 2. For the following century (18—) we add 0. (It was for this reason we could heretofore disregard the century.) For the following century (19—) we add 5.

These four numbers, 4-2-0-5, we remember with mnemonic aid, by using the numerical code *r-n-s-l* and note for remembrance, "The centuries **run** easily."

Here are a few more examples of how to reckon the day of the week:

George Washington was born February 22, 1732.

February	equals	0	2
22 equals 3×7 , remainder 1	"	1	3
1700 as the century	"	2	5
Instead of 1732, we reckon with 31, since we are dealing with February. 31 equals 4×7 , remainder 3	"	3	6
31 divided by 4 equals 7; 7	"	0	6
		—	
	Total	6	

George Washington was born on a *Friday*.

The last pages of manuscript for this book were completed on April 14, 1939.

April	equals	2
14 equals 2×7 , no remainder	"	0
1900 as century	"	5
39 equals 5×7 , remainder 4	"	4
39 divided by 4	"	9
	—	
	Total	20

20 equals 2×7 ; remainder 6

So this book was finished on a *Friday*!

Now, only the code for the months remains to be learned, for which I promised you mnemotechnical aid. You can use these symbols for remembering dates, too, as I mentioned at the beginning of this chapter. The first consonant of the code word, which agrees in every case with the initial consonant of the symbol for the month, gives you the numerical code for reckoning dates.

January	New Year	Year or Era	4
February	Valentine's Day	Sweetheart	0
March	St. Patrick's Day	Shamrock	6
April	Easter	New Fashions	2
May	Memorial or Decoration Day	Remembrance	4
June	June 21, longest day	Summer begins	0
July	4th of July	Independence Day	2
August	Vacation month	Leisure	5
September	Labor Day	Toil	1
October	Columbus Day	Mariner	3
November	Thanksgiving Day	Church	6
December	Christmas	Tree	1

And now let us try to simplify this whole system for practical everyday use. The value in *workaday life* consists

merely in being able to know immediately every day in the current year, the year past, the one to come.

If this is the goal we set for ourselves, we can simplify our computations to a great degree by noting the results for these three years.

Take 1939 for instance:

1900 (the century)	equals	5
39 equals 5×7 , remainder 4	"	4
39 divided by 4 equals 9; 9 equals 7, remainder 2	"	2
		—
	Total	11

1939 is 11, or — 7 equals 4.

If we keep 4 in mind, figuring out any given date in the current year is a matter of seconds and can be done mentally.

June 20, 1939, for instance, is

June	equals	0
20	"	6
1939	"	4
		—
		10

Total is 10, therefore Tuesday.

In the same way we can arrive at the results for the following years:

1938	: 3
1940	: 6
1941	: 0

This simplified method of computing dates is extraordinarily useful in business life. *It is another example of the tremendous practical value of mnemotechny.*

PART TWO

THE ART OF PUBLIC ADDRESS

CHAPTER XX

THE APPLICATION OF MNEMOTECHNY TO PUBLIC SPEAKING

AFTER these little mnemotechnical games we turn again to the sober realities of life. There are few things more important for the practical man of affairs than the ability to make a speech to a large gathering of his fellows.

You know from your own experience that people with the so-called gift of speech usually are leaders in their clubs and lodges and, most important of all, in business gatherings. There are many professions, indeed, based largely or entirely on speech-making abilities, such as the law or politics. With the growth in importance of the radio in influencing public opinion, the ability to make effective public speeches has become more and more desirable. Throughout our history the words of great speeches go echoing, words which swayed and influenced those who heard them, such as Patrick Henry's challenging, "If this be treason, make the most of it."

The first demand made of a speaker is that he be able to make his address extemporaneously, without manuscript. It is not too much to say that it is *impossible* to make a good speech if one has his eyes glued on a manuscript. The verbatim reading of a typed manuscript can never equal an extemporaneous address.

The speech read from script lacks the living quality of the extemporaneous address. In the latter the audience

follows the speaker in his thought-processes and searches with him for the exact, apt word. The natural sentence structure is entirely different in speaking from that in writing, and the written speech has longer sentences than the address.

A listener can understand the trend of thought more easily when he has helped, as it were, in its formation. It is more difficult for him when he merely listens to sentences styled, beforehand, away from an actual audience.

In fact, the influence of the audience on the speaker should not be underrated. Even without interruptions or spontaneous applause or signs of disapproval, the speaker can read from the countenances of the audience how far they understand his address and agree or disagree with him. And he will be able to shape the rest of his speech according to their reaction. But if he wishes to get a reaction from his audience, two basic principles must be established: First, he must not be hampered by a set speech prepared beforehand, for then there is no chance for him to make changes and he cannot introduce a new thought because he cannot stray from his manuscript. Second, a speaker must look at his audience occasionally, to get the play of expression on their countenances. His eyes must be free to look at his public, not riveted on his manuscript. The speaker should realize that his eyes are as important as his voice, and that expressive eyes augment the impression made by his voice, or even replace it. The listener, who has to keep his eyes fastened on the mouth of the speaker, can also demand that the latter, in turn, occasionally look at his public, instead of merely reading from manuscript.

If the speaker is able to answer heckling without losing the thread of his discourse, he shows presence of mind

and ready wit. For example, this little story is told about a certain eloquent American politician:

He was constantly interrupted by a man in the crowd who kept shouting, "Liar!" After about the twentieth repetition, the speaker paused and fixed his eye on the heckler. "If the gentleman who persists in interrupting," he said, "will be good enough to tell us his name instead of merely shouting out his profession, I am sure we shall all be pleased to make his acquaintance."

Such ready wit in answering, combined with the immediate resumption of a speech, is possible only for extemporaneous speakers who are not fettered by a manuscript. But the good speaker should catch and turn to his own advantage not only heckling but even the inarticulate responses of his audience.

The speaker who pays attention to the expressions on his auditors' faces very soon notices whether he is being completely understood or whether he need elaborate a part of his speech. From their countenances he can also see whether he is boring them by going into too many details, or whether, on the contrary, he has condensed a certain passage too much and should amplify it. But all this is possible *only if he keeps his eyes on his public*. So the man who merely reads an address in public has really no right to be called a "speaker."

The very same thing holds true for the man who has learned his address *verbatim*. There is nothing so devastating for the speaker as to lose his place. And the ever-present fear of getting stuck is bound to affect his speech. With a partially learned address, the speaker suffers the additional fear of perhaps not being able to find his place when his memory fails him.

There are many other reasons why the extemporaneous

speech is to be preferred to the written manuscript. But let this aspect of the matter suffice:

In the extemporaneous address, the speaker always seems to be drawing from a great reservoir of learning. While he is framing his sentences freely as he goes along, he unconsciously gives the impression of having an inexhaustible store of knowledge, of which he has tapped but a small portion of what he really has at his disposal. *Exactly the opposite impression is created by the manuscript reader.* When a man reads a prepared speech, the listener unconsciously assumes that he has written down every little thing he knows about his subject—especially since the listener of course is no judge of the length of time he spent on it. The extemporaneous speaker therefore always seems to draw from wide knowledge, while the manuscript reader seems to have exhausted his information in preparing his talk. *A good speaker should never confine himself to a manuscript.*

When a speaker prepares and uses a manuscript, it is because he is afraid of getting stuck in his speech. This fear may be caused by sheer stage fright, or by apprehension of forgetting the speech with a consequent total loss of memory. I shall come back to stage fright in another connection later. For the present I would like to deal with the second possibility—fear of having one's memory go blank—and try to help the speaker who does not trust his memory.

CHAPTER XXI

PREPARING PUBLIC ADDRESSES

A METHOD for delivering a speech extemporaneously, without a manuscript, is of little use to those of my readers who do not know how to set about preparing the speech. That, too, must be studied. As preparing the speech is a necessary preliminary to delivering it in public, I shall give a few simple suggestions for guidance.

A definite, comprehensive outline of all your material is essential for every public address. It is not bad pedagogy for the school teacher to require that all compositions be first outlined. Although written assignments and extemporaneous speeches differ in many respects, they have this in common; both must be logically organized.

In order to plan and outline an address, the speaker must review all the material he has on his subject. Therefore if a man is called on to speak on a subject about which he is not well informed, he must begin by collecting and collating his material; that is, he must connect his material with familiar cue words or with cues he conceived for this particular address. Not until he has collected and sifted his material can he set up an outline, for he must so frame his outline that he can put all his material under the different headings. In addresses intended to be not only instructive but also persuasive to the speaker's point of view, it is essential to work out the end of the speech

first. Since the correct ending is a condensed summary of the entire main theme of the address, it should therefore include the essential thoughts. So by carefully preparing a conclusion, the speaker can easily extract and put together leading sentences which at the same time serve as the skeleton of the entire speech.

In laying out his plan and outlining his material under the various subheads, the speaker must always keep the aim and purpose of his address in mind, the time allotted him, the place and the composition of the audience.

He must be especially clear in mind about the aim and purpose of his speech, so that he will not introduce ideas theoretically bearing upon his subject but extraneous to the expressed purpose of this particular address. In a good speech no sentence and, of course, no paragraph is superfluous. Therefore the speaker should ask at every point of his talk, Of what value is this to the subject as a whole? and, Is it necessary and requisite for the deductions which the listener is to make from the address?

And the speaker must consider these points in reference to the time allotted him. If it is not definitely specified (as in a college lecture), the speaker must bear in mind that an audience grows restive at the most interesting of addresses. Listening intently is a form of mental labor, and the more closely a person concentrates in listening to an address, the more he taxes his brain. The listener in most instances is learning something new, and as a consequence his brain works along with the speaker's in that it has to assimilate the new in some way. It is therefore inconsiderate and rather unwise for a speaker to take up too much audience time. An address of a purely theoretical nature, not enlivened by lantern slides or demonstrations, must

not last more than 45 to 60 minutes. The speaker who has not had enough experience and practice to judge from his outline the length of time required for his address should therefore try out his whole speech aloud, at least once, on his intimates, talking at the tempo he will later use in public, in order to see how long it will take.

Nothing is more unfortunate than to have everyone, even the most ingenuous member of the audience, notice that the speaker is running over his time. Everyone notices then that the speaker, while he is conscious of the fact that he should no longer try the patience of his audience, nevertheless cannot resist the temptation of crowding in all he can in a few minutes—perhaps really essential points. The result is a feeling of nervous tension on the part of speaker and audience. This tension grows and yet it could have been prevented by the simple means mentioned above.

The speaker who runs over his time often suffers further misfortune. Swayed by the feeling that he must soon bring his address to a close, he uses such expressions as "In conclusion," or the like, without having the following sentences bear out his statement. He overlooks the fact that one should never promise his audience anything, not even the conclusion of a speech, without keeping his word. Such an occurrence allows the audience to ascribe unreliability to the lecturer. And they do not restrict it to the instance in question but extend it to the man's very personality and the contents of his address.

Along with a careful gauge of his allotted time the speaker must always take the place into consideration. The larger the hall, the slower must be his speaking tempo, in order that he may enunciate clearly and loudly enough

to be heard in the last rows. Since one can speak much faster in a room, where the question of clear articulation is simple, than in a hall, the speaker must find out the size of the auditorium in advance in order to judge the time needed for his talk.

It is just as important, especially for the beginner, to consider what kind of public he will have before he prepares his speech. The degree of culture, the sex, and above all the factual knowledge must be considered in detail. If a doctor gives a talk on a course of treatment to a group of his colleagues, his address will be entirely different from what it would be to a lay audience. In the latter instance he must avoid medical terminology or at least explain his terms, which he would of course assume his fellow practitioners knew. The same holds true for diagnosis, prescriptions, and the like. The explanation of medical terms, unnecessary and therefore superfluous in a group of doctors, is, however, necessary and essential in a group of laymen. It would be a mistake to explain terms to the former, an error to omit explanations to the latter. In order to avoid unfortunate errors of this nature the speaker in preparing his address must bear the type of audience in mind. If he has a mixed public, professional people and laymen, it is necessary for him to turn from the one to the other as the occasion demands.

As another example: The lawyer who pleads his cases exclusively before learned judges will necessarily choose other words than for a speech before people not versed in law, as for instance a jury. In the first case, he will lay most emphasis on a clear style and the decisions in like cases before the court; in the latter instance, he will bear in mind the human and psychological factors involved.

But the speaker must fit himself not only to the factual knowledge of the public but also to their average education. In general one may say: Delight in independent thinking is measured by degree of culture. It is therefore a good idea for the speaker not to exhaust all the details of his subject and not to draw all the conclusions himself when he is addressing a cultured gathering. It is a better plan for him to give them the foundation stones, perhaps also the blue-print and plans, and let them build the mental structure themselves. But this treatment of his material is not advisable for a less cultured audience. Rather, it is necessary for him not only to introduce facts and examples, but even to draw the conclusions himself and explain them to his audience as clearly as he can.

But in any case the speaker should never exhaust his material and consequently land in a morass of unrelated details. Such an address easily loses all lucidity and bores the audience. It is also to his advantage and interest to present appropriate summaries showing that he is complete master of his subject, limited only by time and the mental capacity of the audience.

If the address calls for proofs or demonstrations, the speaker must be sure to make them general and understandable. There is no point in bolstering a statement with examples familiar to the speaker but unknown to a part of the audience. According to the degree of culture of the audience, the speaker must also make his basic statements before he develops them.

CHAPTER XXII

THE INTRODUCTION AND THE CONCLUSION OF A LECTURE

IF I devote an entire section to the introduction and the conclusion of a lecture, it is because these two sections are so often neglected.

First of all, the introduction and the conclusion must be related to the main theme in the matter of time. In the usual 45- to 60-minute lecture, the introduction should not take more than about three minutes, and the conclusion perhaps five minutes.

The introductory remarks serve a twofold purpose: introducing the speaker personally and introducing his factual material. The speaker must first establish a personal relationship with his audience, if he has had no introduction as guest speaker; in addition, he must tell the subject of his talk and his reason for speaking. In speeches to clubs these two points are often appropriated by the chairman in his welcoming address. The speaker should therefore omit them from his introduction or restrict himself to a very few words on the subject. It is poor policy for him to repeat what the chairman has just stated in other words. This is a further argument against reading a speech from manuscript, for it is only the person accustomed to speaking extemporaneously who can at the last minute fit his opening remarks to the introductory words of the chairman.

If the speaker has been advertised, or if the occasion does not demand a personal introduction—as, for instance, a course in college—the subject should be defined at the outset. In doing so the speaker must remember that the public in most cases knows only the title of the lecture announced in the papers, on posters, or the like. Such a title, which is necessarily terse and rather commonplace, merely indicates the context without defining it. Very often the same title might apply to an entirely different aspect of the subject or a different treatment of it. But in a good lecture the introduction does not leave the auditor in doubt about what subject, or rather what aspect of the subject, the lecturer will treat. An exact definition of his theme is therefore the main point of the factual part of the introduction.

If, in his rather trite title and commonplace announcements, the speaker cannot avoid using a foreign word or a term not commonly known—such as “mnemotechny”—it is his duty to define it as clearly as he can in his introduction. If the subject itself is difficult to explain, as for instance a theoretical topic demanding experiments and illustrations, it is permissible and advisable, at the end of the introduction, to sketch a plan of the entire lecture and to tell the audience what they may expect. There is an advantage to this technique in that the auditor can come to a halt at the various stopping places along with the lecturer, and therefore be in a better position to concentrate.

One uses somewhat the same principle when taking a child for a walk. As modern psychology has long since recognized, one should never set out with the child without a plan of action. A distinct goal is necessary and, if possible, stopping places along the way in order that the child may take pleasure in the walk and not find it tedious.

The conclusion of a speech is even more important than the introduction. The speaker must always remember that his concluding words make the *most lasting impression* and must therefore be exact and definite. The conclusion has the task of summarizing the topic sentences of the main theme and impressing them on the auditor, not to say hammering them home if he has not followed the discourse attentively. The word "summarizing" of course does not mean a detailed repetition of statements previously made, since they weary and bore the auditor. Merely the most important thoughts in condensed form should and must be repeated in the conclusion. That is, the words "I approach the end of my discourse" or "I summarize briefly" are entirely permissible and customary. In fact, they are to be recommended, since the auditor, from experience, pays renewed attention to the words which follow—an attention comparable to the tension he experiences at the end of a prize fight. He knows *that the most important things will follow*—the conclusions drawn from the preceding lines of thought. He knows, also, that the end of the lecture is definitely at hand, and he will therefore *concentrate his attention*, if the speaker has been able to catch it at all, on the matter in hand.

Since the conclusion should be memorable, it is often desirable to enliven it with a suitable visual image, a quotation, or a proverb. The average man is inclined to accept a familiar quotation or a proverb as true. If the speaker is fortunate enough to tie up his deductions with a quotation or a proverb, so that the combination makes an impression on his listeners, they are often inclined to transfer the accuracy of the quotation to the contents of the speech itself. Of course, such an association should be handled with care; that is, proverbs and quotations must not be

dragged in willy-nilly, but must come in quite naturally and easily if they are to make the intended impression.

What astonishing after-effects clear-cut and cleverly fashioned closing sentences can have is best shown by the fact that such words persist not only for decades but for centuries. As a case in point, think of Cato's remark, familiar to all school children:

"Delenda est Carthago!"

NOTES FOR A LECTURE

Our advice in regard to talking without a manuscript does not imply that the beginner should deny himself every kind of written aid. In the next chapter we shall discuss the excellent impression made by the man who can speak entirely extemporaneously and we shall call mnemotechny to our aid in order to cultivate the art ourselves.

But since we are proceeding step by step in this book, we shall first discuss the ways and means available to the beginner in freeing himself from the written speech on the one hand and keeping to written cues on the other.

These cues are usually called lecture notes. These are made to insure the speaker against getting stuck in passing from one train of thought to another, but they may claim his eye for only a split second at a time, for he must not let it stray from his audience for any length of time. It follows that lecture notes should never consist of complete sentences, but only cues which can be read at a glance and yet suffice in connecting one thought with another. These cues should refer to the most important thoughts in the lecture, so that no essential point will be overlooked. It is not practical to list the cue words one under the other.

It is better to write them down in a rather pictorial fashion so that they catch the eye.

Experiments have proved the majority of mankind to be eye-minded—to remember the pictorial best. If the cues are arranged pictorially their individual positions on the paper are unconsciously impressed on the mind through repeated reading, and the speaker need not, during the course of his speech, search for the cue to his talk at that point. For this reason notes should not be written down at the last minute, but as soon as the speaker has decided what plan he will use in his treatment of the subject. Then, as he develops his speech, he should lay aside his cue sheet and, at first silently but later aloud, memorize his train of thought with the aid of his notes. If, with the help of his cues and the vocabulary at his command, he is able to develop his thoughts and express them clearly in good style, he may rest assured that his ability to do so will not desert him at the critical moment of facing his audience.

And let the beginner take heart in the fact that there is scarcely a speaker who does not lose the thread of his discourse in the course of a rather lengthy lecture. No matter how disciplined his powers of concentration, he will wander from his subject to some degree during the course of his talk, either through some remark from the audience, the opening and closing of a door, or even some vagrant thought of his own. For the beginner, losing the thread of his discourse is the same as getting stuck. The experienced lecturer, if he does not immediately get back to his subject, will repeat his last statement in other words and meanwhile glance at the next phrase on his cue sheet, assuming he has a picture of his notes sufficiently clear in mind to know which cue was last used and about where on the sheet the next one will be.

It is not a bad policy for a speaker who has "run off the rails" in this way to develop a point more tersely than he had intended. It is even advisable to return to the point later on and add what was omitted, provided naturally that the speaker has not progressed beyond this division of his talk. If he has, he should pass it by, for if he does not he will make his address more involved for the audience. The lecturer should always take into account the fact that his public knows *the plan* of his address or at least can grasp it, but that it never knows *in what way* he will develop his subject matter under the various headings. Therefore he can make certain transpositions and changes in his original plans about which his audience does not know, so long as he does not disturb his main outline.

The same holds true for a not uncommon occurrence: the speaker suddenly gets a new idea while delivering his lecture, an idea he would like to incorporate. Such additions are possible if the new idea crops up during the discussion of the section in which it properly belongs. But if it appears as an afterthought, the speaker should not recapitulate and go back to a section in order to bring it in. This would do his lecture more harm than good. There is scarcely a single thought so essential as to justify disturbing the entire plan of a lecture for its inclusion.

Although we have referred quite generally to *the cue sheet*, we do not mean that *one and only one* sheet is permissible. But it is a good idea when you use several sheets of paper to use a small size, to write on only one side of the paper, and to clip the sheets together, so that one or more will not be misplaced during the lecture or slide from the stand or the table to the floor. Bending down to pick them up causes hilarity, breaks the contact between speaker and audience, and in general ruins the lecture.

CHAPTER XXIII

A PRACTICAL EXAMPLE OF A CUE SHEET

AS AN ILLUSTRATION of what an actual cue sheet looks like, I have chosen Chapter XXI of this book, the chapter on "Preparing Public Addresses." The cue sheet for this section might read as follows:

Outline

- logically organized
- collecting and collating material
- cue words
- outlining under subheads
 - Aim and purpose of the speech*
 - not extraneous to the expressed purpose
 - Of what value is this to the subject as a whole?

Time allotted

- audience grows restive
- 45 to 60 minutes
- try out the whole speech aloud

Running over the time

- feeling of nervous tension
- "In conclusion"
- unreliability

Place

- speaking tempo

What kind of public

- Example: doctor
- lay audience
- mixed public

Average education

- all details of the subject
- foundation stones
- unrelated details

In order to follow these cues more easily, turn back to Chapter XXI. You will find that those words—and only those—written on the cue sheet are in boldface type.

Now, practise the following exercise: Read and reread the section on “Preparing Public Addresses” until you know its contents rather well. Then turn back to this cue sheet and with its aid try to recapitulate the section as closely as you can. Do this by yourself three or four times and then lay the book, open at the cues, on a table or desk and repeat the entire chapter-section *aloud*, aided by the cues, as though you were addressing a large gathering. When you have progressed so far that you can repeat the contents without getting stuck and without losing the thread of your discourse, try making a public address on the subject to your family or friends. If there is someone in your group who can criticize your mode of expression and general style, by all means ask him to attend.

When you have mastered this address, choose a new subject and repeat the exercise; that is, follow the rules you used for Chapter XXI. Collect and collate your material, make an outline, pay attention to all the other matters you heeded so successfully in your first attempt. Then write out a cue sheet, somewhat similar to the one given above, and with its aid make your address.

And do not forget to invite me when you make your first public appearance.

But before you do that, we want to make a joint test of our mnemotechnical knowledge, to see whether it is wide enough to let us discard the cue sheet and speak extemporaneously, from memory, eye to eye with our audience.

CHAPTER XXIV

THE EXTEMPORANEOUS SPEECH WITH MNEMOTECHNICAL AID

A **SPEAKER** is always more impressive if he can dispense with a manuscript, and this impression is heightened if he can dispense with every *kind of written assistance*, including a cue sheet.

When he steps before his audience without lecture notes in his hand or so much as a piece of paper on the reading desk, he gives the impression of *complete mastery of his subject, unfailing confidence, and unassailable authority*. Of course, he dare not then disappoint his audience in delivering his address. So we ask ourselves whether our mnemotechnical equipment is equal to freeing a speaker from his notes.

At this point I should like to advise the beginner in public speaking not to make this transition too quickly. It is absolutely necessary to accustom oneself to speaking with notes first, before one substitutes mnemotechnical devices for the notes themselves.

But when you have once reached the stage of reliable self-confidence, the mnemotechnical trains of thought which you have mastered are an unsurpassable means of freeing you from every written aid.

To prepare for this exercise we need to make only a few changes on the cue sheet described in the foregoing chapter. These changes are designed solely to build a uni-

form series, preferably of single words and never of complete sentences such as are on the cue sheet.

The series which I should suggest for mnemotechnical use for the subject of Chapter XXI reads somewhat as follows:

outline
 organization
 collecting
 collating
 cues
 subheads
 purpose
 nothing extraneous
 value
 time
 restiveness
 length
 rehearsing
 over time
 tension
 conclusion
 unreliability
 place
 tempo
 kind of public
 doctor
 laymen
 average education
 details
 foundation stones
 unrelated details

You see immediately that this series shows the same words as those on the cue sheet, but in a simplified form which makes them suitable for mnemotechnical usage.

To remember a series of this sort, we know that two methods are available for us:

(1) We can impress this series on our minds by establishing a connection between the individual words in serial order; that is, we can use the method outlined in Chapter VII, which we used for the series beginning with "school" and ending with "book."

(2) As a second possibility, we can associate the words in the series with the street series (see Chapter XII) or with the basic series of key words (see Chapter XV). Which method is preferable? The answer depends upon your own personality and preferences. I know many people who prefer the first and nearly as many who prefer the second. In general I should say:

Memorizing a series of words *according to context* (Chapter VII) takes a little more time than learning them by association with the key words. But the words also remain fixed in mind for a considerably longer period of time. So if the matter in hand is an address which must be remembered for a rather long while and perhaps repeated, *memorizing by context* is always preferable. And this method is better for learning addresses for another reason. The words in such a series have a natural connection, so that it is easy to associate each one with the one following.

It is essentially different when you wish to employ mnemotechnical aid in *remembering an address delivered by someone else*, and not to be repeated by yourself. In this case the important point is to make your brain function as quickly as you can; that is, not to lose too much time in memorizing the words. Since we already know that memorizing with the help of the key words is faster than memorizing according to context, it is evident that

in listening to lectures which we wish to remember, the second method is preferable. With the help of our basic series we have enough certain starting points to be able to jot down the exact contents of a lecture as soon as we get home and find the time and inclination for it.

Let us take a practical exercise:

Memorize the series of words given above by using one of our two mnemotechnical methods. Go through them again and again until you are sure you have mastered them and can effortlessly associate one word with the next, beginning anywhere in the series. And do not be content with repeating the words silently but say them out loud two or three times before you go on to the next step.

The next step consists in *delivering the complete address* with the help of the list of words which you have memorized so completely and thoroughly. When you have tried this out in practice a few times, you will be amazed at your ease in *handling the subject spontaneously*, aided only by the cues indelibly impressed on your memory. It will be like unreeling a cable from its spool.

Once you have experienced the real delights of extemporaneous speaking, you will find it easy to set new tasks for yourself in building up new subjects for speeches. Every new subject should be undertaken in the way we described in the foregoing chapter, but instead of a cue sheet write down the simplified series of words and memorize them by mnemotechnical methods.

In this way you will be able to *make the longest and most difficult address extemporaneously, without notes, in any auditorium*. You will not be encumbered with a scrap of paper; you will be able to look directly at your public, and therefore you can be confident of success.

But remember: A good lecture or address must not only be logical in organization and comprehensive in content, but also pleasing and clear-cut in speech. A varied vocabulary and a variety in sentence structure are especially important. So we shall consider these subjects now.

CHAPTER XXV

A VARIED VOCABULARY

THE speaker who is able to express himself without using hackneyed phrases, and who can inject color into his talk by means of a variety of images and a well-rounded vocabulary, can feel fairly sure of holding the attention of his audience, for it will not become apathetic from the boring conviction of knowing what is coming next.

There are few things which bore an audience more and make a lecture more thoroughly monotonous than the constant repetition of words.

An address is always more effective if the speaker can vary his vocabulary as well as his sentence structure. The good speaker employs a vocabulary of 10,000 to 15,000 words, whereas the average vocabulary embraces only 2,000 or 3,000 words. The other terms either are theoretically familiar to the student of public speaking but not freely used, or else they remain unknown to him. In order to enrich his vocabulary he should pay attention to unfamiliar words when he runs across them in books or newspapers or in his attendance at lectures, and even in his daily intercourse. He should impress them on his mind and, if need be, write them down. He should, as a further step, accustom himself gradually to use them and so in time widen his vocabulary. But if he reads or hears words whose meanings he does not know, he should never neglect looking them up in a dictionary or an encyclopedia. He must

recognize the fact that the more words he has at his command the more fluently and effectively he will speak, but he must be sure that he knows a word before he uses it. This holds for foreign words as well as for the less familiar words in his native language.

The feeling for words can be sharpened and a vocabulary extended by collecting synonyms and determining what essential difference there is between them.

The words *speak, tell, say, relate, narrate*, like the words *chapter, part, subdivision, unit, section*, mean practically the same, but there is always a subtle distinction between any two of them. The beginner should try to make these distinctions very clear. To do this, let me repeat my advice: Always do these exercises *aloud instead of silently*, in order to approach your goal more closely.

Defining words is an excellent habit for anyone who wants to widen his vocabulary and practise speaking in public. As long as concrete objects are selected for definition, the matter is comparatively simple, for anyone can define the meaning of house, garden, or table. It is, however, a little more difficult where abstract ideas are concerned, and the questions, What is humor? What is pride? What is self-defense? are not so easy to answer concisely in one sentence. In formulating the answer special attention must be paid to having the definition not only exact but so precise that it cannot apply to all sorts of other things.

And the speaker is often forced to employ foreign terms or difficult concepts out of context. I have already discussed the fact that an address to laymen must be treated differently from the one to professionals. Statements of fact which may be assumed to be familiar to colleagues must be explained thoroughly to laymen either in their

own terms or in synonyms. The making of such substitutions belongs to the task of the student of speech.

If he has accustomed himself to defining concrete and abstract terms effortlessly and clearly, he can go a step further and attempt quotations and proverbs. Such practice is worthy of emulation because *it helps develop quick thinking* and the rapid and precise gathering and outlining of material.

VARIETY IN SENTENCE STRUCTURE

Next to a varied vocabulary, variety in sentence structure is important in preventing monotony, in heightening dramatic effect, and giving the voice an opportunity to change its tone or rhythm. The beginner often is at fault in this respect. He goes to one of two extremes.

One speaker places one declarative sentence after another without daring to use questions, subordinate clauses, or declamatory statements. Such a person might begin a lecture on New York as follows: "New York is the largest city in the world. It consists of five boroughs. The focal point is Manhattan. Manhattan is bounded by the East River and the Hudson. Manhattan is sometimes referred to as New York City and it is the heart of the metropolis. There are many skyscrapers in Manhattan," etc. Such a monotonous use of the declarative sentence is, of course, deadly.

Another speaker, wishing to avoid this monotony, becomes so involved in explanatory phrases without point or conclusion, that he cannot disentangle himself. This is equally undesirable.

The good speaker must avoid periodic sentences which are too long, but must utilize all possibilities of the lan-

guage, such as declamatory sentences, rhetorical questions, and a variety of subsidiary clauses, in order to give his speech color and variety. For this purpose, practice in everyday speech, in all manner of expression, is admirable.

Example of a simple *declarative sentence*: Industry in the United States prospers more when the people are convinced that peace is assured for a number of years.

The same in the form of an *exclamatory sentence*: May the people of the United States be convinced that peace is assured for a number of years, in order that industry may prosper!

Direct question: How will the conviction that peace is assured for a number of years affect the people of the United States? Industry will prosper.

Rhetorical question: Will the conviction of the people in the United States that peace is assured for a number of years, have an effect on industry?

Repetition of the original declaratory sentence, in inverse order: The more the people in the United States are convinced that peace is assured for a number of years, the more industry will prosper!

Such variations are indispensable to the speaker. During an address itself there is no time to indulge in lengthy meditation and gauge which form will be most effective. It is therefore necessary to cultivate the different forms of expression through practice in daily conversation, observing, as you do so, how each affects the listener.

Pay particular attention to the questions. The cited examples of direct and rhetorical questions differ in their effects: The direct question demands an answer which the speaker usually supplies himself. The rhetorical question, on the contrary, carries an implied answer. But one must be on guard lest the *positive rhetorical question* be

interpreted *negatively*, and vice versa. If, for instance, in the sentence given above, the rhetorical question reads: Will the conviction of the people, that peace is assured for a period of years, *not* have a beneficial effect on industry in our country? the speaker through the insertion of the negative *not* wants to assert that the conviction will have a beneficial effect. But when the speaker asks, "Is that fitting and proper?" he wishes to express through this positive form of the rhetorical question that the matter under discussion is *not* to be construed as fitting and proper.

CHAPTER XXVI

STAGE FRIGHT

ITS CAUSES

EVEN complete mastery of one's subject and the finest delivery cannot assist the speaker overcome with stage fright.

By "stage fright" we mean the condition of unreasoning terror that assails certain speakers, actors or singers shortly before they are to appear before a gathering of people. This affliction is particularly awkward if, instead of disappearing during the course of the performance, it remains present or even grows more pronounced. And, unfortunately, the good friends and acquaintances who kindly tell one not to be afraid are not only most ineffective but they often *increase rather than diminish* stage fright.

In order to combat this evil effectively we must first discover its roots, which vary in individual cases.

One of the most usual causes is *the fear of getting stuck*, regardless of whether the speaker is conscious of the fact or not. For this reason we find stage fright more common to the actor than to the lecturer, because the former has to memorize verbatim, while the latter can rely on his facility in speech and his knowledge of his subject, without necessarily knowing it word for word. The man who is accustomed to speaking extemporaneously, who has had experience in speaking before small gatherings, has proved

to himself his ability to clothe his thoughts unhesitatingly with the right words, and soon conquers his stage fright. The consciousness of being master of his material, combined with the certainty of being able to express his ideas forcefully, is enough to cure the public speaker of his shyness in large gatherings.

Another frequent cause of stage fright is *faulty breathing*. The beginner who, at a public address or even in a small gathering, has found himself unable to control his breathing and has had to gasp for air like a fish out of water, will fear a recurrence of this unpleasant dilemma. This fear will grow as the hour of his appearance comes nearer, and in this instance, too, kindly admonitions will avail little.

This evil can be combatted only by regular and frequent exercises in breath control. The beginner should not appear in public until he has learned how to conserve his breath so that he no longer need fear constriction in his throat. Once he is consciously able to conserve and use his lungs and larynx in accordance with the demands of his sentence structure, his feeling of apprehension will disappear of itself and a rather important cause of stage fright will have been removed.

But the most common cause of stage fright is simply *fear of appearing before a crowd*. Persons who are able to talk fluently when conversing tête-à-tête and who are not awkward in small gatherings or at large dinner parties are assailed by sudden fear when they have to address an impersonal audience. The main reason for this state lies in overvaluing the critical capacities of the crowd. The beginner believes that everything he says must be particularly weighty because he is talking to a larger, more critical gathering. And yet it should be obvious to him that the very reverse is true; the critical capacity of the

crowd is inferior to that of the individual. In a rather large audience the individual is easily inclined to leave criticism to others. The speaker who has prepared his speech carefully and is thoroughly familiar with his material naturally knows more about his subject than the auditor who attends in order to learn something new. When the student of public speaking realizes this fact, his exaggerated fear of criticism from the crowd disappears. No trace of stage fright will remain when he is once convinced that he has something of real factual importance to impart to his audience.

For practice I can merely advise you to *increase the size of your audience gradually*. That is, first give your talk, thoroughly prepared and outlined on a cue sheet, to friends and acquaintances, and do not step before the public until you have tried out your speech on a small and select group. But in the final analysis, we must repeat, stage fright cannot be cured by simple, logical reasoning. It is an emotion buried in the subconscious mind. It has all the earmarks of what we call an inferiority complex, which we must combat with all the means at our disposal, since it reacts on man's achievements and ultimate success.

Thanks to the researches of Coué and Baudouin on the one hand, and Freud and Adler on the other, we know nowadays that the subconscious has a powerful effect on thought and action. It is merely necessary to apply the right method in guidance for each individual case.

ITS CURE

Strange to relate, there are still some unenlightened people who do not believe in the subconscious mind because they can neither see, hear, smell, nor taste it.

What are dreams and what is their source? You are convinced that you "dream" in the true sense of the word only when you are sound asleep. Sleep, however, means the complete absence of conscious thought. But if, in spite of this complete lack of consciousness, you nevertheless see, hear, or experience anything at all, it is proof that something else exists beside or beneath actual consciousness.

No doubt you have often awakened in the morning with the lingering memory of a dream, yet unable to recall the content of your dream no matter how hard you try. Shortly afterward you go out on the street and see something that calls back a fragment of your dream. At the same moment its entire content flashes into your memory.

Let us try to explain this peculiar occurrence. If we picture the subconscious as resting below the conscious mind of man, the two must be separated by a door which we can visualize as open or closed. The step leading to this door we designate the threshold of consciousness. The dream and all that goes with it rests on the subconscious (if your sleep is sufficiently deep). But when anything—a person, animal, or object—enters the circle of your consciousness, tied up or associated with a similar thing in your subconscious mind, the connection can be strong enough to project the dream-content over the threshold of consciousness.

In everyday practical life, as well as in dreams, there is evidence of the existence of the subconscious. You must at some time or other have had the experience of being unable to recall a perfectly familiar name. It may be the name of an acquaintance, a place, or a foreign word. In such instances, we are apt to use the expression: "The

name's on the tip of my tongue," and explain that at the moment we cannot recall it. Since we knew this name a short while before and since we will later recall it unaided, we have proof that it really is in our minds. But if we are unable, in spite of this fact, to recall it, momentarily it is not "known" to us; or in other words, besides our positive consciousness there must be another mental sphere, belonging to our consciousness but beyond our control. Since this other or second consciousness lies under the truly conscious we call it the subconscious.

The effect of the subconscious on your daily life cannot be rated too highly. Assume that somehow, somewhere you get to know a person whom you have never before seen. In most cases you immediately develop a *feeling of like or dislike*, that is, *sympathy or antipathy*. There is no logical explanation for this feeling, since you have never heard anything about this person and consequently do not really know him. And his appearance may offer no grounds or excuse for your feeling. The use of the term "feeling" is sufficient proof of the fact that there is *no logical explanation* for your attitude.

Nowadays psychologists know that all feelings of this sort are based on the subconscious and that by psychoanalysis and hypnosis they can discover the subconscious reasons for them and make them "known." Later, in another connection, we shall return to psychoanalysis and hypnosis.

For the present we will be content with observing that *inferiority complexes* also have their roots in the subconscious and that *stage fright* is *merely a manifestation of a general feeling of inferiority*. What causes an inferiority complex? How can it be removed?

As far as causes are concerned, individual-psychology teaches us that the roots of an inferiority complex are found

in childhood experiences. The child is totally unable to fight the battle of life with his own weapons and in all cases relies on the help of adults. The more conscious a child is of his inadequacy and weakness, the greater is his feeling of inferiority. Child-education should attack this feeling at the proper time. Unthinking parents and educators foster it in the child when they continually refer to his unimportance, insignificance and inferiority. In many cases the child is made conscious of his general inadequacy by being required to do things which he cannot do and which should not be expected of him at his age.

How this general feeling of inferiority will develop depends upon the child. Many children consider themselves very important and their impulse is to take the center of the stage and demand the undivided attention of their parents and educators. If they thrust themselves into the foreground merely to balance their own insignificance and feeling of inferiority, no harm is done. Sometime and somehow the child will of course learn to adapt himself to his environment. It may be in kindergarten, at play with children of his own age, or not until he goes to school, where the same demands are made of children of the same age-level. The child who feels himself thrust into the background is the one who attempts to impress his superiority on his companions of like age or else tries to make them believe him superior. In this instance, we speak of an overcompensation of the feeling of inferiority. I need not emphasize the point that this is all a matter of unconscious behavior, for it stands to reason that little ones or even school children are not acting consciously.

At any rate it is clear that a feeling of inferiority almost always has its roots in false methods of child-education. A feeling of inferiority is hardly ever innate, but is "sug-

gested" to the child by ignorant parents and educators. We shall consider this idea in more detail later on.

Fortunately we know that *every feeling called forth by suggestion can be removed by suggestion*. It is therefore not too difficult a task to find methods for removing stage fright and an inferiority complex.

But, we must remember, the man whose fear of the public is so great that he dare not make a speech even when he has something important to say, usually is the one who applies for a job in fear and trembling, utterly unable to tell what he knows in a rational manner.

These persons *must suggest to themselves* that they are perfectly capable of fighting their own battles and thereby remove the suggestion of inadequacy.

Naturally the simplest cure would be to achieve something so important that it would excite the admiration of one's fellows. The admiration of one's own little world is the most effective means of convincing a person of his ability and knowledge, thereby choking off all feeling of inferiority. The difficulty in applying this remedy lies in the fact that people with inferiority complexes rarely can accomplish really great and unusual things as long as they suffer from this feeling.

How, then, are we going to overcome this sense of inferiority? *By mnemotechny!* The simplest experiment, that is, the repetition of a rather long series of words, will do the trick. Far-fetched, you think. But these mnemotechnical exercises, faithfully performed, are useful in facing the scoffer, because they work.

As you have already learned, they operate in twofold fashion. First of all, we know that mnemotechnical series of words strengthen one's powers of concentration remarkably. *Powers of concentration in turn foster self-assurance,*

since they convince a man of his own knowledge and abilities. Self-assurance and a feeling of inferiority are, however, incompatible; where one gains the ascendancy the other must give way.

It should be easy to add a mastery of sentences to one's mastery of words. If the words are so chosen that they serve as cues for a unified address, anyone who can repeat them can also in a short time repeat a series of sentences related to them. If he has repeated the series of words not only aloud to himself but to a circle of friends and acquaintances as well, he will be able to do the same with sentences. In doing so he proves to his own satisfaction that he can make a public address. As soon as he realizes this, his fear of speaking disappears.

A second factor enters in, which at first glance seems unrelated, but in reality is *extraordinarily important*. The experiment of being able to repeat out of sequence a rather long list of twenty or thirty words, after hearing them once, will *impress all* those who do not know the mnemotechnical connections. If you have followed my advice you have long since had this experience. Arousing the interest and approval of a gathering is tantamount to applause and is a turning point in conquering feelings of inferiority, especially stage fright. Approbation strengthens one's self-assurance, and self-assurance and an inferiority complex are mutually antipathetic. Even the applause of a rather small circle is *extraordinarily suggestive*, and this power of suggestion increases with the size of the audience as well as with the repetition of the experiment.

As you see, these factors work on each other and *mnemotechnical aids are effective in transforming the shy, apprehensive person who fears an audience into a self-assured, entertaining personality.*

PART THREE

THE POWER OF SUGGESTION



CHAPTER XXVII

BASIC LAWS OF SUGGESTION

MENTION the power of suggestion to a group of people and as a rule many of them will say, "That may apply to a number of people, but I am not suggestible." This assertion merely indicates that they have not pondered the matter carefully. Yet one encounters the assertion so often that it seems to me necessary to show by example what psychologists understand by "suggestion."

Modern advertisements offer us an example of the use of suggestion in everyday life. Look at a newspaper ad or poster which recommends a certain make of car. You will notice that it extols, in greater or less detail, the advantages this particular make has over the cars of rival manufacture. This type of advertisement aims at conviction. It is directed at the *mind* of the reader.

Continue to glance through the advertisements and you will frequently see one that says tersely, "Use X soap," without advancing any reason why one should use this soap and no other. Here every argument or appeal to reason is lacking. The advertising firm believes that the slogan, "Use X soap," can be hammered into the reader or the passer-by through sheer repetition of the idea. In other words, it relies on the strength of suggestion in its advertisement. This idea has proved its worth in countless instances. Every day you use innumerable things, such as mouth wash, tooth paste, and the like. You are accus-

tomed to using a certain brand without even comparing it with others of the same price. You have, in fact, *simply succumbed to the power of suggestion*, because you have heard or read about this particular brand again and again.

This power of suggestion affects more phases of your own life than you are likely to realize. The influence wielded by great newspapers is a case in point. The constant reiteration of an idea in the editorials of a newspaper impresses it upon the mind of the reader.

The trends in fashion operate in much the same way. When the leaders of fashion in the feminine world adopt a certain style of dress, a certain color, or a certain hair-do, the action never fails of its suggestive power and is soon copied by women everywhere.

One of the mightiest examples of the power of suggestion in history is the *Maid of Orleans*. The belief in her supernatural power was so instilled in the soldiers that her mere appearance was enough to influence the credulous French into feeling that they would be victorious, although up to that time they had been worsted in all their battles with the English. On the other hand, the suggestion of her infallibility had so affected the English, that her presence convinced them that they could not win an encounter with the French. Therefore the war was won by France.

The miraculous cures at Lourdes and similar shrines have been the subject of wide discussion and debate. That such cures are really effected, when doctors have given up hope for the patient, is unquestionable. But it is equally certain that these cures are merely of a *suggestive nature*, and are due entirely to the credulous pilgrim's conviction that he can be cured at a holy shrine rather than by medical science.

Every modern nerve specialist knows what a great, de-

cisive role suggestion plays in medical practice. Later we shall come back to this subject and consider it in greater detail.

There are always skeptics, of course, who scoff at the use of suggestion. As lecturer at Masaryk College in Prague I had occasion to talk to such a group and convinced them by their own reactions of the actual power of suggestion. The method which I used then is an old formula, but its efficacy has not been lost, even in modern times.

I was lecturing on the cultivation of the senses, the sense of smell in particular, and remarked casually that odors spread like waves and that the sense of smell varies considerably among individuals.

"If I should use some strong-smelling liquid in an experiment here on the platform," I told them, "its 'waves of odor' would, of course, reach the front rows first, but it would be quite possible for some individuals seated at a distance to perceive them sooner, because their sense of smell is better developed."

I then drew the cork from a bottle and said I would pour a pungent red liquid into a basin. I asked the students to raise their hands as soon as they caught a whiff of it, explaining to them that through this experiment I could demonstrate my audience's sensitivity to smell.

Then I actually poured the red liquid out of the bottle into the basin. Almost immediately a few hands were raised, soon more followed, and within the compass of one half or three quarters of a minute, about three quarters of those present had their hands in the air.

Then I proved to them that the red liquid was absolutely odorless—that it was impossible, no matter how hard one tried, to detect the slightest odor.

The experiment proved to them how quickly the ma-

majority of the audience had succumbed to the suggestion of an odor.

In business life, suggestion is used continually, and very often success or failure depends upon how artfully it is applied. Suppose we take a scene in a men's clothing store as an example. A salesman has just sold a handsome, colored shirt, and he would like to make a bigger sale, as the customer is obviously prosperous. If he merely asks the customer whether he wants anything else, the latter is unlikely to decide whether he needs anything or not, and will probably say "No." But if he asks the customer whether he would like a nice tie to go with the shirt, he will, perhaps, make a sale. On the other hand, the customer may think of the numerous ties he has at home and decide that somewhere among them is one which will go well with the new shirt. *But if the salesman knows how to use the art of suggestion*, before he wraps up the shirt he will take one or two attractive ties, loosely knot them, and hold them against the shirt so that the color scheme is tempting and therefore suggestive. If, in addition, the salesman has learned how to plant the suggestion that this particular tie is indispensable for the shirt, *he will certainly make the sale.* And this type of salesman surely has a greater chance of advancement than the average clerk.

The important role played by suggestive (leading) questions we shall consider in a later chapter. But, in passing, let me stress one fact in this connection. From the standpoint of technique, this salesman makes the greatest mistake when he asks his customer, "There is nothing else you need?" This typical form of leading question puts "No" into the mouth of the customer and definitely precludes further sales.

What applies to the salesman in a store is even more

true in the case of a *traveling salesman*. For him suggestion is of even greater importance, because the customer who comes into the store obviously wishes to make a purchase, while the customer upon whom the traveling salesman is calling may perhaps not be in a buying mood at the time of the call.

Professor Copeland of Harvard University has proved that some 30 different motivating factors enter into the purchase of a single article. Of these about half are based on reason and half on emotion. In this connection we are not concerned with the reasoning factors. In every instance, however, where an appeal is made to emotion, suggestion gets the best results.

Suppose that a salesman wants to sell a book on "new ways to achieve success." The customer is not interested. The salesman therefore is confronted with the problem of influencing an uninterested person by suggestion. He begins to talk of things apparently unconnected with the book. He mentions someone with whom his customer is acquainted either personally or by reputation. He says that this person has increased his earnings by \$10 or \$20 a week and attributes this increase to the information he got from the book on "new ways to achieve success." If the salesman is sufficiently trained in the technique of suggestion, there is no question but that this method of approach will be successful in convincing his customer that he too can increase his earnings. For this reason he will buy the book.

The insurance companies have been outstandingly successful in applying the technique of suggestion. A large insurance company recently ran an advertisement picturing a mother with two happy little children. The caption under the picture read: "Will you leave them a memory of good

intentions—or money every month?” An excellent suggestive question in the right place! Every reader of the advertisement, feeling that the question is directed at him, will answer that he wishes to leave his family enough to live on rather than with a memory of good intentions which he left unfulfilled. All the examples given above deal with conscious suggestion; but unconscious suggestion is equally potent, and the following examples are undoubtedly true of your own experience.

While we are at work we hear someone playing the piano or singing nearby. The sounds of the music reach us very faintly and have perhaps been going on for some time before we perceive them. An especially loud tone directs our attention to the faint sounds, and from then on they ceaselessly disturb us and interrupt our work. Why? If the volume of sound has not changed and all the conditions remain the same as they were before we were disturbed, a *subjective alteration* must have taken place.

From the moment we first became conscious of the noise, the thought of being disturbed took root. The conviction of being disturbed carries with it *the power of suggestion*, and so we listen intently for every sound in order to prove to ourselves that we are profoundly disturbed. All this, of course, goes on *subconsciously*. But the result is that a real disturbance now exists, caused not so much by the waves of sound themselves as by our intense listening for them, which consequently draws our attention away from our work. Any conscious attempt to concentrate on our work and put the noise out of mind only intensifies our disturbance. We shall consider the reasons for this fact later on.

In this case the noise which disturbed us came from outside. But we have all experienced the sensation of hav-

ing some tune or other suddenly enter our minds, without any conceivable reason, and without hearing it played or whistled. Quite unexpectedly it begins to run through our minds, and no matter how hard we try we cannot stop it. We may tell ourselves a hundred times that we have neither leisure nor interest at the present moment for tunes in general and this one in particular; we may try to immerse ourselves in other interests. But the little tune plays on, haunts us and will not leave us.

Why and how the tune suddenly took possession of us is not relevant to the point under discussion. The essential point is that every conscious effort of will to free ourselves from its grip is *entirely* useless and the tune absorbs us more and more in proportion to our effort to rid ourselves of it. This applies not only to tunes, of course, but to lines of verse, a "memory gem," a picture, or any other mental concept. When it has once seized us, our consciousness holds it fast and autosuggestion is powerful enough to effect the very opposite of what our conscious minds intend.

In our *emotional lives*, too, suggestion plays an *extraordinary part*. Imagine, for instance, a group of people hiking on a hot summer day. They are all in gay spirits. Suddenly, however, one of them begins to complain of the heat and says that he is thirsty and that there is no place within several hours' walk where one can get a drink of water. It isn't long before the suggestion of thirst begins to affect other members of the group. They feel thirsty too. And the consciousness of lack of water in the vicinity intensifies their thirst.

The same thing is true of the feeling of tiredness. It is very dangerous, especially on expeditions with children, to let the idea of tiredness arise, for it quickly gets the

upper hand and soon all the children complain of being tired.

On the other hand, people can make a long and difficult hike without becoming aware of their weariness if they are telling jolly stories or singing, because the autosuggestions called forth are strong enough to dispel any thought of weariness and imbue the human organism with activity and strength.

From the foregoing examples, it is obvious that suggestion constantly affects our daily life and that everyone is to some degree suggestible.

CHAPTER XXVIII

ARE YOU SUGGESTIBLE?

THE degree of suggestibility varies greatly in individuals, as does the ability to practise suggestion. The reasons for these individual variations are not easy to explain. But, first of all, I should like to correct the general impression that suggestibility is identical with a weak will. *Many strong-willed people are highly suggestible.* Almost always suggestibility is a product of sensitiveness, and in most cases we can prove that a lack of suggestibility presupposes a lack of sensitiveness.

If you want to test your own suggestibility, try the simple experiment known as the pendulum of Chevreuil. Old as this experiment is, there is nothing else that answers the question so satisfactorily.

Take a string about a foot long and tie a ring at the end of it, making a simple pendulum. Hold this pendulum with two fingers of your right hand in front of your body, and wait until it comes to a comparative point of rest. It cannot stop altogether because you cannot hold your hand absolutely motionless. But that is not essential to the experiment. The hand holding the pendulum should not rest on any piece of furniture but should be held before you.

Now close your eyes and make up your mind not to move your hand. Concentrate on a definite direction, either horizontal or vertical or circular, keeping your eyes

closed, and try not to move your right hand. The length of time you devote to this depends on your powers of concentration and so it cannot be gauged in general terms.

When you open your eyes you will see that the pendulum has been moved in the direction you were thinking of. The reason for this is simple. As you were imagining a definite direction your mind carried a message to the motor nerves of your hand, telling them to move the pendulum in that direction, though you had firmly determined not to move your hand. Your concept of movement was stronger than your conscious resolve to keep your hand motionless, and the transmission of this concept to the nerves in your hand was completely unconscious. That the hand and not the mind set the pendulum in motion can be proved by hanging the string on some fixed point in the room. Although you may stand a few paces away and concentrate intensely in a certain direction, the ring will not change its position by so much as an inch.

Try the experiment again, eyes closed, *changing* the movement upon which you are concentrating. Imagine the ring is moving perpendicularly to your body and then swinging back. As soon as you open your eyes you notice that the pendulum is making this movement. Now imagine it describing a circle from left to right. When you open your eyes you will see that this movement has actually occurred. So, during the course of the experiment, the movements can be varied at will.

A variation of this experiment can be made by having another person watch you, while you keep your eyes closed, and inform you of the movements of the pendulum. In this way you do not need to open your eyes to check the results. Also, instead of holding the string in your hand

you can tie it to the end of a little stick, making a sort of fishing rod. This way of doing the experiment shows the movements more clearly than holding the string in your fingers.

While the original idea of this experiment goes back to Chevreuil, its development and especially its clear relationship to autosuggestion is due to Charles Baudouin, Professor at the Institute Jean-Jacques Rousseau and Lecturer in Philosophy in Geneva.

After you have experimented to determine your own suggestibility, try this test on one of your friends. Stand or seat yourself opposite him and ask him to stretch out his arm and lay his hand on yours. The experiment is a little easier if you ask him at the same time to look into your eyes, though this sort of eye-fixation is not absolutely necessary.

If you have never before made an experiment with this partner, you must explain that he is to make his mind as blank as possible; that is, he must make his will neither positive nor negative. He should neither decide to take up your suggestions nor fight against them.

A few seconds after he has stretched out his arm, when he is completely relaxed, make the following suggestion:

"You feel your arm getting heavier, the muscles in your arm are straining more and more, your hand is resting more and more firmly on mine, more and more firmly, you feel you can no longer remove your hand nor bend your arm, your hand lies firmly on mine, you cannot remove your hand."

Whether or not this suggestion is really strong enough to prevent your partner from removing his hand from yours, wide-awake as he is, depends on a whole series of

circumstances, of which we can name only the most important:

1. *The general suggestibility of the partner and his immediate receptivity.* We must distinguish between these two conditions. A person who is fundamentally suggestible may not be ready to receive impressions at the moment because of circumstances beyond his control. On the other hand, your suggestion may be successful with a man who is really not suggestible by nature, should conditions at the time happen to make him impressionable.

2. *Your own ability in transmitting suggestions.* There is no doubt that the power of suggestion differs exceedingly among individuals. But it is equally certain that the power of suggestion can be extraordinarily strengthened and led in the right direction by suitable exercises and especially by concentration.

3. *The method of suggestion.* By this I mean a certain routine, different from the power of suggestion itself. It depends more upon the skill of the operator than upon his powers of concentration. It is inextricably tied up with a knowledge of human nature, that is, in the case just cited, with a correct appraisal of the character and receptivity of the partner. One important point in the routine, for instance, is choosing the exact time to say the decisive words: "You cannot remove your hand." The contact between the two hands decides this crucial moment. While I am making the suggestions cited above, I can plainly feel whether my partner's hand is really pressing more firmly against mine or whether, on the contrary, it is withdrawing. In the latter instance, it would naturally be a bad error for me to make the final suggestion. The fact that my partner is still able to remove his hand might undermine his belief in his suggestibility for a long time

and make further experiments more difficult if not impossible. But if I feel his hand pressing against mine firmly enough, it would be a mistake to postpone the final suggestion too long, for I might not be able to keep this contact so firm for a longer time. All these factors depend largely on personal reactions, in this particular instance on the ability to react immediately and correctly to my partner's feeling. This is what I mean by routine, and you will observe that there is considerable difference between routine and powers of concentration.

4. *Extraneous factors may have a decisive effect.* The experiments at Duke University, which we will later consider in greater detail, have shown the results of taking coffee, alcohol, etc., before making the experiment. The effect of these drinks varies with the individual. Coffee makes some persons tired although for the majority it is mildly stimulating. The action of alcohol is more pronounced. It makes some people excited and gay; others, melancholy and sleepy. So, while we cannot lay down a general rule, we can warn you against undervaluing the effects of these drinks. As long as we have no psychological findings to guide us, we must try in every individual case to intensify the recipient's suggestibility through outside aid for the duration of the experiment; that is, we must learn how we can lower his subconscious resistance.

Any excitement is inimical to suggestion. If your partner, for any reason, is in a state of excitement which you cannot calm, the only wise thing to do is to drop the experiment completely. I shall come back to all these matters in the discussion of hypnosis.

In testing the suggestibility of your friends there are many variations of this experiment. Instead of having him place his hand on yours, you can have him stretch out his

arm, with his hand free in the air. The difficulty of this experiment, compared with the other, lies in the lack of possible control through pressure or lack of pressure. Therefore it calls for closer observation and a more perfect routine on the part of the experimenter. In this experiment you may suggest to your partner either that his hand is growing heavier and heavier and finally sinks, or that it is growing lighter and lighter and finally is raised.

Another variation consists in asking the partner to clasp his hands tightly together with fingers interlaced. Then suggest that he press his hands more and more firmly together, so that he cannot unclasp his hands. Here you can reenforce your own observation of the working of suggestion by passing your hand lightly over his clasped hands. After a little practice you will be able to decide whether your suggestion of interlacing his fingers is intense enough to make your partner unable to unclasp them.

When these experiments have succeeded, you can try something more difficult:

Take a number of playing cards, not more than six or eight for a start, and hold them in your hand as you do for playing a game. You are therefore holding them fan-wise, so that you can see each one. Now sit opposite your partner, concentrate intensely on one of the cards, and ask him to draw out a card. The experiment is successful if he draws out the card on which you were concentrating. Urge your partner not to think for himself, but to rely solely on his feelings in choosing the card. You can make this experiment easier by holding one of your partner's hands in order to establish physical contact. Naturally you cannot take the hand with which he is to draw out a card or there would be the danger of guiding it unconsciously.

You can make this experiment more difficult by holding

more cards in your hand or by laying them on the table between your partner and yourself.

In making this test, pay attention to the following rules:

1. Do not begin until you have developed and tested your ability to concentrate.

2. Try the experiment only with persons whose suggestibility you have already tested, whether by Chevreuil's pendulum or by some other method.

3. In the beginning, work with one person rather than with several, for in this way you will be able to establish a contact between the two of you.

4. Do not make more than two or three experiments in succession.

5. Compare your actual results with the law of probability.

You can easily figure out what this law is. If you have six cards in your hand, the probability of hitting on the right one is 1:5. If you have eight cards in your hand, the probability is 1:7. This means, that if it is merely a matter of chance and no suggestion is present, 1 hit to 5 or 7 errors is the mathematical probability. But if your score is higher than these chance hits, you may ascribe it to your growing ability to concentrate and your *ability in suggestion, which goes hand in hand with concentration*. Later you can, of course, take any objects you choose in place of cards.

CHAPTER XXIX

SUGGESTION AND EDUCATION

IMPORTANT as suggestion is in adult life, it plays a far more important role in the life of children. This idea is so tremendously important that it deserves detailed development.

Day after day one sees children who are willing to obey certain teachers, parents and nurses without question, although these same children are fractious and disobedient with others, set themselves in opposition to them and refuse to accept any instruction from them whatsoever. Since the children are the same in both instances, the reasons for their behavior can be found only in the character and conduct of the adults. The person who understands how to approach children with natural authority and to present his instructions as final and unquestionable can be certain of his suggestive power. It is unnecessary for him to show severity, for strict disciplinarians may be feared but they are seldom loved.

There can be no doubt of the fact that love and respect are better foundations than fear for developing suggestibility. Those adults who expose their own weaknesses by letting their emotions run away with them, who lose their tempers and then complain about disobedience and the general lack of respect for authority, never can win suggestive power over their charges. *Children always delight in discovering weaknesses in the grownups whose authority*

they must acknowledge—especially weaknesses which are ridiculous. If one has once been made to feel ridiculous and consequently embarrassed, it is naturally all up with suggestibility.

Every system of education rests on suggestion. There is no question as to whether it can be applied or not, but only as to whether it is applied correctly or incorrectly. Baudouin declares that it is impossible to remove suggestive influences from the child. "If these influences are not methodically regulated," he says, "they result in countless unintentional suggestions, determined by accidental circumstances, which ordinary, everyday living leaves in the soul of the child. There is only one difference: by supervision one can make these suggestions work for good, while a lack of supervision may result in evil as well as good, and even lead to catastrophe."

In all this discussion we must remember that children are particularly suggestible. Verworn was entirely right in declaring that the reason for this lies in the *child's lack of reasoning ability and consequent lack of judgment*. Up to a certain age the child is not able to judge what his elders tell and teach him. This kind of judgment, indeed, predicates mental perceptions and conclusions based on them—which the young child naturally does not possess.

But as the child's mind develops, his critical powers begin to function and his suggestibility becomes dependent on the full recognition of his rights by his teacher. If the child once gets the idea that his teacher has treated him or his comrades unjustly, his belief in trustworthy authority vanishes and with it his former readiness to be influenced.

If parents would only consider how great the suggestibility of a child usually is, and how the impressions of his earliest years remain with him for life, and even develop

in intensity, they would exercise considerably more care in choosing the persons to whom they intrust his welfare. Herbert Parkyn and many others have referred to the frequent lack of discrimination shown by parents in hiring nursemaids, when they give preference to this one and that one *because she asks for somewhat smaller wages*. They overlook the fact that their child will be spending the greater part of his time with this "educator," that he will consequently feel her influence most, and perhaps receive many suggestions whose harmful effects he will be unable to cast off in later life.

If the person who educates the child is too strict, there is danger of cultivating too blind an obedience, which may have unfortunate results in adult life. The teacher who insists on having his wishes carried out unquestioningly will, of course, usually succeed in getting his own way. But he overlooks the danger to the child who, unaccustomed to independent thinking but blindly obedient, will in later life instinctively look for someone who will tell him what to do and lift all responsibility from his shoulders. Alfred Adler has pointed out that gangsters and criminals are usually of this type. Such persons, it is true, rarely are ringleaders, but they are always ready blindly to follow the orders of their leaders, regardless of the crime contemplated.

On the other hand, it is not right to allow children too much leeway in expressing their own wills, thereby encouraging them in thinking themselves the center not only of the family but of their entire environment. Such an egocentric point of view encourages them in getting the upper hand in stressing their individual importance. The adolescent, in this instance, is less concerned with real values in life than with the impression he is making on

others, especially on his immediate environment. Then we have to deal with persons who later on never admit their own mistakes but blame them on chance and the attitudes of others. Neither in marriage nor in business will they be successful, for their partners generally will be unable to share their high opinion of their lives.

Pedagogy, the science of education, has demonstrated right suggestions and the avoidance of false approaches in the following examples:

It is always wrong to generalize a childish mistake. If the child has been guilty of untruth, do not say: "You are a liar." Do not say, when he has misbehaved, "You are a bad child." Generalities of this kind carry with them the seeds of suggestion. The child, because he respects adult authority, will think he really is a "liar" or "bad" and conduct himself accordingly. It is more correct, from a pedagogical point of view, to express surprise that a child, usually truthful, can utter a falsehood, or that a child, usually well-behaved, can misbehave. Such generalizations, which are in direct opposition to the mistakes, make for suggestive good. They convince the child that he is truthful and good, and they help him in his attempt to arrive at these virtues.

From the countless mistakes in our method of education and its sins of omission, I should like to quote one more, all too prevalent:

Many parents and teachers greet an acquaintance, in the presence of a child, with the question, "How are you?" and then are forced to listen to countless symptoms of illness experienced during the preceding weeks. The child, of course, listens attentively to the conversation of adults and consequently receives suggestions of sickness which make an impression on his subconscious mind. This danger is

greater if he likes the person who is retailing these symptoms. Obviously, it becomes still more pronounced when the person making the harrowing remarks is the one who exerts the most authority over the child—his father, mother or teacher.

Such suggestions awaken the idea that bodily ills and sickness are necessary evils which occur in everyone's life and cannot be avoided. These impressions on a young child can easily result in imaginary illnesses in later life, more difficult to shake off than real organic ills.

But if you give the child the suggestion that man is naturally a healthy animal, that sickness is unnecessary and preventable, you strengthen his belief in his own health and general well-being. In later life, this conviction will lie in his subconscious mind and help him conquer any illness which he might suffer.

While the role which suggestion plays with young children cannot be overestimated, it diminishes as he matures. As soon as he is capable of thinking logically and critically, one should attempt to substantiate the suggestions given with good, convincing reasons.

Ignatius Loyola, famed as the founder of the Jesuit order, trained his pupils for the most successful and fruitful of lives. In condensed form, his methods were as follows. The idea of God was first instilled in the boys. Solitude and silence, and contemplation in darkness were urged on them. Fasting and the mortification of the flesh followed. Most important of all, from his own experience, Loyola sought out all that had made the strongest impression on himself in developing his faith. From these experiences he inferred that every youth could be infused with the idea of God. He set them the task of thinking for a set period of time exclusively about these things.

Only afterward could the pupil think of his own interests and choose his career. Thereby Loyola held aloft two torches for the spiritual life: (1) the idea of God as central idea, and (2) a chosen career as the other, with success in it redounding to the glory of God.

The educator who gives the right suggestions and fortifies them at the right time with logic and reason may be sure of his success as a pedagogue.

CHAPTER XXX

SUGGESTION IN MEDICINE AND LAW

THE use of suggestion in medical practice is as old as humanity itself. When we think of Indian and Negro medicine men dancing and intoning incantations, Egyptians bathing in holy rivers, Chinese meditating on the graves of their ancestors, and Turks making pilgrimages to holy Mecca, we appreciate the healing power of suggestion for all people in all epochs.

Good results are usually achieved. Of course we must not infer that the ancients or even their prophets were in any way conscious of these suggestions. But that is not the point. What is important is that suggestion, in general, effects cures more readily if one knows little about its psychical bearings. The less a man knows about psychology, the more credulously he allows the magic of suggestion to work upon himself. The very fact of using secret magic formulas and prescribed rituals, as in the instances mentioned, is conducive to *evoking and abetting autosuggestion* in effecting a cure.

In this respect life today is as it was yesterday, for in many methods of treatment suggestion is still employed to effect mysterious cures. This is true, for instance, in the use of electric currents in cases for which the physician is convinced that electricity in itself is ineffective, but for which belief in its effectiveness suffices to free the patient of minor nervous disorders. In this connection it is interest-

ing to question why certain medical quacks have not only larger practices but also greater success than recognized physicians. The answer is usually that these people have acquired a reputation by making a few happy, accidental cures, generally mysteriously effected. Also, a quack doctor habitually employs certain definite rites, which make a profound impression because of their very oddity and translate the patient into a state of excitement which involuntarily induces autosuggestion. In such instances, faith really effects a cure.

This is not strange if one realizes that in the art of healing it is difficult for the attending physician to decide where the effect of the prescribed medicine leaves off and suggestion takes up. To decide when this transition occurs is as hard—or rather, as impossible—as in a good lawyer's speech of defense, in which logical conviction can never be sharply differentiated from the result of suggestion. Nowadays when a man goes to a spa to take a cure, the waters which he drinks and in which he bathes may be beneficial to his health. But in the majority of cases, apart from his altered routine of living, his cure can be ascribed to his *belief* in the curative powers of the waters. The effects of all the various contributing factors are considerably decreased if the patient himself has no faith in them. Since the power of suggestion merely aids the cure, it is wise not to use suggestion alone but to associate it with remedies suitable for the complaint in question. For instance, stammering can be cured relatively easily by suggestion. If the cure is not completely successful, breathing exercises and lessons in speech may be undertaken, so that the treatments reenforce each other. As another example, warts can be made to appear and disappear through the power of suggestion.

In any case, suggestion plays an extraordinarily important role in medicine today, even aside from hypnosis, to which we shall return in another connection. Nowadays every doctor prescribing for a patient's nervous system finds suggestion indispensable, regardless of whether he has informed his patient of its application or not.

Suggestion plays as important a role in all sciences and arts as it does in medicine. To illustrate this point, I should need more than this one volume. I shall therefore limit myself to its most important applications, and point to its influence in law. Here again I shall limit myself to its most important aspect, namely, the testimony of witnesses during trials, especially in criminal cases.

Let us ignore the cases in which a witness consciously tells an untruth. No doubt suggestion also plays its part at some point in the process of inducing a witness to bear false testimony, yet there is always a conscious motive at hand at the time the testimony is given. No person bearing false witness consciously does so without knowing whom he wants to help.

Much more interesting psychologically are the cases in which the testimony is obviously untrue while the witness believes he is telling the truth. Such lapses in giving testimony contrary to fact can be explained by the instinctive striving of the individual to fill out in some way or other his lapse of memory. The example cited earlier in the book of the affair with the revolver, made by Liszt in his law seminar, shows us that only a very few people can recall an occurrence correctly, even though it happened before their very eyes a few minutes previously. But in everyday life many days or weeks, often months or years, intervene between the actual occurrence and the testimony concerning it. Since human observation and human

memory are unreliable in general, it is evident that lapses of memory are fairly sure to occur in individual instances.

This in itself would not be so bad if mankind did not have the tendency to fill out such gaps and thereby call up false memories. In cases of this sort, it is solely a matter of self-deception. The person concerned is always convinced that his memory is giving him a true picture. He will therefore be ready unhesitatingly to swear to the truth of this picture. That witnesses are often inclined to fancy a resemblance between two people and consequently develop it and confuse one individual with another is well known. Suggestible people are inclined to recognize the perpetrator of a deed in any person who is accused of it, if the police official or the judge is not very careful in framing his questions. For this reason it is a good idea never to show a single person to the witness for identification, but to bring out a "line-up," for in searching out one individual from many, suggestion is naturally not operative. In such instances, the accused is brought out with members of the police force dressed in "civvies."

In this connection there is an amusing little story which, though it cannot be verified at this late date, is so sound psychologically that it might be true.

At a time when highways were still unimproved and dangerous, a well-to-do London citizen was on his way back home from the coast. He had a good deal of money on his person and therefore urged his coachman to make all possible haste in reaching London before dark. But twilight fell, and presently the coach was held up by a highwayman, who, threatening the merchant with his revolver, robbed him of his money. The merchant could not see the robber's face clearly, since it was growing dark; he did, however, notice his pitch-black hair.

Once the robber had the money, he allowed the coach to proceed and took to his heels when he saw a man approaching on horseback. In his flight he lost his black wig, which the horseman found and put on his own head for a joke. But at the gates of London the merchant told his tale of having been set upon and described the occurrence in detail, that is, the general stature of the robber and his thick black hair. Shortly afterward the man on horseback drew near the gates. When the guards saw the black wig which he had put on, they accused him of the robbery and brought him to trial the next day. He was brought before the merchant who was the only witness. When the latter saw his height and his wig, he swore that this man and no other was the guilty person. The judge pronounced a verdict of death by hanging, as was customary in those days.

But the real robber happened to be in the courtroom. When the verdict was pronounced, he asked to be allowed to speak, and putting the wig, which had been placed on the table, on his head, turned to the merchant, and suddenly called out: "Your money or your life!" in the same accents he had used the day before on the highway. The merchant, immediately recognizing the voice, said: "This man and no other is the criminal!" Thereupon the robber laid the wig on the table and, turning to the court, said: "There you see what to expect from these gullible people. The witness expects to find the guilty man in every man who dons this wig." The judge was convinced of the truth of this observation, and allowed the prisoner as well as the robber to go free.

Although the self-deception of the merchant is pictured in a humorous light, the matter itself is typical of what happens in court daily. The witnesses reconstruct occur-

rences or appearances in the effort to fill the gaps in their memories by autosuggestion, and thereby unconsciously bear false testimony. The more deeply versed in psychology the judge is, the more carefully he weighs this sort of testimony.

For the average citizen who has little to do with courts of law, the taking of testimony is a weighty matter, to be discussed for days with his family or with others concerned in the case. And so, no matter how objective a man tries to be, he will not be able to remain wholly uninfluenced by suggestions imposed on him by conversation or an item in the newspapers. How far this sort of influence extends naturally cannot be stated in general terms, for it depends again on the suggestibility of the individual as well as on his closeness of observation and the strength of the impressions made upon him. If we stay with criminal law, however, we can proceed on the theory that almost every witness has formed an opinion of the prisoner's guilt or innocence from what he has heard personally or indirectly. If he considers the accused guilty, it is largely a matter of the subconscious, which exaggerates the facts in the testimony indicating guilt. And the contrary is true if he considers the accused innocent.

So far I have concerned myself solely with the "testimony" of witnesses quite apart from cross-examination by the lawyer. But a discussion of the role which suggestion plays in law would be incomplete if I did not add a few words about "putting leading questions."

Everyone knows that one can "read a question into" a witness as well as ask him one, and the tremendous importance of leading questions is acknowledged by all criminal lawyers. For instance, if you ask a witness who is describing the apparel of the defendant, whether his hat

was brown or gray, the witness in the majority of cases will be inclined to mention one of these two colors. Only in rare cases will he say that he does not remember any hat at all. But he will give this answer more readily if the question is put in this form: "Did the accused wear anything on his head?" Then if the answer is in the affirmative, the question as to the kind of headgear follows, and then turns to the color.

Lawyers are, of course, familiar with this routine, but the reader who is not versed in leading questions and is unfamiliar with such matters may orient himself by asking questions of his intimate friends.

You are conversing with an acquaintance, for instance, about an experience of a few weeks back. By chance you remember definitely it happened on a Tuesday. Ask your acquaintance: "When was this, anyway, on a Wednesday or a Thursday?" You will find that as a rule you will get the answer: "Wednesday, I believe," or "I think it was Thursday." The proper answer, of course, is either, "It was Tuesday," or "I don't remember."

Or you may be taking a walk with an acquaintance when a rather striking-looking automobile drives by, which, you distinctly notice, is black. You ask your friend whether the car, which has meanwhile disappeared, was brown or blue. The answer will usually be one of these two colors instead of the simple truth that he paid no attention to it, or that he saw it and the color was black.

A variety of examples can obviously be given. If you try some of them out a few times, you will appreciate the importance of leading questions, and understand the working of suggestion better than by reading the theory of it.

In any case, it is an established fact that civil and criminal cases are tremendously affected by leading questions.

It is not necessary to point out that it does not matter whether the leading question is put consciously or unconsciously.

In an important criminal case, in which I was acting as lawyer for the defense, the outcome hung entirely on the testimony of a single witness. The statements of the defendant and the sworn testimony of this witness were contradictory, and without other evidence the case appeared to be deadlocked. The prosecuting attorney then asked the defendant: "Do you mean to declare that this highly respected witness is perjuring himself?" The defendant, startled by the question, immediately denied such intention, whereupon the prosecuting attorney triumphantly added: "Therefore you admit the witness is telling the truth and you are lying?" The first question was obviously leading up to a suggestive question of the most damaging sort for the defendant. It was strengthened by the second.

I therefore objected vigorously to this line of questioning and the judge ruled that such leading questions could not be put to the defendant. Since there was no other evidence, the court ruled the case "in dubio pro reo" and dismissed the charge. But had I not objected, the defendant would have fallen prey to the adroit leading questions of the prosecuting attorney. If you think it over you can see that the defendant should have answered the first question by saying that he had no intention of indicating that the witness perjured himself but that the witness might be mistaken. But the chief characteristic of leading questions is that you have no time to think them over—they put into a person's mouth the answers which the questioner wishes to hear.

CHAPTER XXXI

MASS SUGGESTION

THE preceding chapters were confined to a discussion of suggestibility in the individual. But the question arises, particularly at the present time: Are masses of people more or less suggestible than individuals? We must first of all agree on a definition of terms: by *mass* we mean a *large group of people held together by certain common ideas, acts or events*. If we stand in Times Square in New York City in the afternoon or evening, we may be completely surrounded by a large group of people. But in this group each individual has his own ideals and aims. On the other hand, twenty or thirty people listening to a single speaker can be a mass, since their thoughts are entirely or in large part dominated by the speaker. Even the persons moving here and there in the crowd at Times Square can readily form a mass in our meaning, if they follow the news, flashed out on the Times Building, in a body. So we arrive at this definition: A mass, in the psychological sense, is always a rather large number of people held together for a shorter or longer period of time by a common idea. It is not essential that they be actually in one place, for thousands of persons in different localities in the United States, separated from one another by thousands of miles, but listening to the same speaker on the radio, constitute a mass.

The answer to the question whether this mass is more or

less suggestible than the individual may be found by attending any gathering and watching the effect of any speech. It is apparent very soon that the mass either applauds the speaker or voices disapproval, that is, it reacts as though it were a single entity instead of a group of widely different people. And yet in the assembled throng there are people of greatly varying ages, different walks of life, and utterly divergent points of view. *Obviously these people could not possibly arrive at similar conclusions if they thought the matter over logically.*

If, in spite of this fact, they voice their approval or disapproval as a body, we may conclude that the individuals in the crowd are not using logical processes of thought but are being swept along by the mass. Therefore, the reasoning capacities of the individual are lowered as soon as he finds himself in a mass of people whom he considers by and large of like mind with himself.

In discussing stage fright in an earlier chapter, I referred to the fact that a speaker is wrong in considering the critical capacities of the crowd greater than those of the individual. The exact opposite is true. Very few persons like to think for themselves, and the majority are glad to have someone do their thinking for them. When they see the people near them in a crowd approving a speaker's words, they would much rather join in the general approbation than decide for themselves whether or not he really warrants support.

To gauge the mass correctly, rate its *thinking capacities* as low as you possibly can and its *emotions* as high as you can. But emotions, as we know, lie in the subconscious, and suggestion is directed solely at the subconscious. This premise likewise leads us to conclude that *suggestibility is far stronger in the mass than in the individual.*

People not only avoid independent thinking but also side-step responsibility. Therefore they favor anything which removes responsibility from their shoulders. The member of a party at a party meeting, seeing the rest of the crowd enthusiastically endorse a bill or some other proposal, is apt to join in with their endorsement, knowing that he will not be held individually responsible for it.

In the individual himself emotions and reasoning powers are nearly always at war with one another. Feelings and instincts are governed by the mind and many an impulse, even many a passion, is curbed only because the mind suppresses it. Since the mass has no feeling of responsibility, it is obvious that impulses and passions are less likely to be suppressed in a crowd than in the individual. Impulses and passions are things which can be governed much more easily by suggestion than by logic. Therefore, the leader who employs suggestion can guide the impulses and passions of a mass in the direction he wishes more easily than he could those of an individual.

The mass, because of its combined strength, always feels powerful and therefore will not tolerate opposition. Try to put up arguments against a speaker who has the crowd with him. *Even the strongest arguments fail utterly.* A mass, determined on a certain action, cannot be restrained by arguing logically against it.

Since the mass does not think, it is considerably more credulous than are the individuals composing it. Otherwise it could not be so easily blinded by a speaker's phrases. Over and over again we see a man carrying his audience to the point of wild ovations, curses, or maledictions. When we read his speech in the quiet of our room, however, and know for a certainty that the printed speech follows the original word for word, we cannot understand

how the audience failed to notice his constant contradictions, how they could applaud such empty phrases, and why none of them observed he had no proof for any of his assertions. We forget that what we tell ourselves in reading the speech is the result of independent thought. The basic mistake we are making lies in supposing the mass capable of thinking.

Perhaps you will say there must have been something in the speech to generate so great a power of suggestion. There most likely was something, but in quantity and quality it must have been greatly overrated. Assume that the speaker succeeds in convincing some five or ten bystanders, because they were already convinced and did not want to hear anything but what he was telling them. From our previous discussions, we know these people immediately transformed his suggestions into autosuggestions and then served as pipelines, as it were, in conducting his suggestions to a wider area.

If the masses were not suggestible, there would be neither wars nor revolutions. When the Sudeten question arose in September, 1938, there were mass meetings in various European countries, the main purpose of which was to foment war. The speaker of the moment stressed and emphasized the necessity for war from the standpoint of his own country, and the masses agreed with him. When Chamberlain then made his historic flights to Berchtesgaden and Godesberg, when peace was assured for a certain period of time through the Munich Conference, all the various nations applauded him and *this applause proved how ardently the people of every country wanted peace.* We would be justified in asking why the same people previously applauded those who were fomenting war, if

the suggestibility of the general mass of people did not already furnish the answer.

Because the masses cannot pause to reflect, they are not open to reason and logic. Gustave Le Bon, who handles this problem very competently in his *Psychology of the Masses*, correctly points out that the only speaker who can be sure of carrying the crowd with him is the one who avoids any sort of sober argument, and simply makes one assertion after the other. *Proofs are unnecessary and exaggeration does no harm.*

That exaggeration is useful in dealing with a suggestible mass is proved by every political speech, wherein the capabilities and accomplishments of the man's own party are exaggerated to as gigantic a size as are the mistakes and stupidities of the opposition.

If a man should talk steadily of his own deeds and abilities in conversation with a friend without giving the other a chance to reply or criticize, he would be considered vain, conceited and a bore. But in a mass such self-adulation not only is possible, but even generates so great a power of suggestion that the masses accept any sort of nonsense if it is presented in an appropriately rhetorical style. The result of this easy suggestibility of the masses is that a leader can guide them to good or evil. If he guides them to evil, they are ready to murder, burn and plunder, all the while believing in an ideal suggested to them as the motivating impulse. I need hardly mention the fact that the atavistic impulses, dormant in all of us, are contributing factors.

The crusades of the Middle Ages are shining examples of the sacrifices and self-denials suffered by the individual in order to prove loyal to an idea suggested by a leader. And not without reason do the English, as well as other

European nations, fear a "holy war" which might be kindled today by the Arabs. They know the idea of a "holy war" could still generate enough power of suggestion to cause millions of Arabs to take up arms against all those outside their faith. That the various Mohammedan nations would differ widely in their conception of a "holy war" does not lessen the extent of this danger.

Since the masses are swayed by suggestion rather than by logical arguments, there is nothing more powerful in its influence upon them than *slogans*. This is true in politics as well as in propaganda. After the World War, for instance, when a part of the German Rhineland was occupied by the Entente and France stationed several regiments of colored colonial troops there, the slogan "*Fight against the black outrage*" in a very short time succeeded in ridding the Rhineland not only of the Negro troops but of the entire army of occupation.

When Patrick Henry was sent as delegate from his native Virginia to the first Continental Congress in 1774, many of the delegates did not think a federal union at all desirable. But Patrick Henry broke down their hostility and pettiness by the famous opening words of his speech: "*I am not a Virginian but an American.*" Henry's ready aptness with the right word in the right place to win over the masses was one of the main reasons why he was called the greatest orator of his time. Dr. Archibald Alexander said: "No man who ever heard him speak on any important occasion could fail to admit his uncommon power over the minds of his hearers." As a matter of fact, it is no exaggeration to say it was one of his striking slogans which determined Virginia's stand in the Revolution and consequently the outcome of the war:

On March 20, 1775, the Virginia Assembly met to de-

cide Virginia's stand. Opinion was divided and important leaders, notably Randolph, were opposed to a war. Then Patrick Henry's wonderful, persuasive speech determined the stand of his native state, a speech which he ended with his famous slogan: "*Give me liberty or give me death!*"

A lack of color and a certain vagueness in a slogan, however, has never yet dimmed its power of suggestion. As a matter of fact, the vaguer an idea is, and the more scope it allows for various interpretations, the more adherents it can win over.

If a candidate in a political campaign promises to reduce the tax on tobacco, his rather limited idea will make an impression only on those engaged in the manufacture or consumption of tobacco. But if he uses the slogan "Lower taxes," it will have a suggestive effect on the majority of people, since most of them are interested in having certain taxes or custom duties lowered. That such promises are rarely kept after election is another matter and does not alter the fact that the chosen slogan has its desired suggestive effect.

Then, too, a slogan is especially good in swaying the masses because it cannot be refuted. A refutation is possible only when something has been proved. But when no proofs have been advanced, when a slogan is simply used as an assertion, there can be no argument and no refutation.

A slogan can change its meaning not only from generation to generation but even from decade to decade, and nevertheless remain alive; so alive that the originator finds his memorial in the slogan, a memorial more enduring than stone or granite. The name of President Monroe has been kept in the minds of posterity through the Monroe Doctrine—"America for the Americans."

To influence an individual by suggestion, we must ap-

peal to his subconscious, and this appeal is made most easily through the *pictorial*. This is true to a striking degree in the case of the masses. *Pictorial speech is the prime requisite for every speaker who wishes to carry the masses along with him in thought or action.* This kind of speech consists chiefly of anecdotes and examples. To hear or read an anecdote requires less mental effort than to follow a theoretical explanation. Therefore anecdotes and examples are preferred by the masses. The speaker who tells or persuades his audience that an especially important building, regarded as a sanctuary by the masses, has been set on fire by political opponents, will influence them more by this story than by any theoretical exposition of the low moral characters of his opponents. The more vividly he can make his audience picture the burning building, the stronger will be his power of suggestion. For this reason, too, such a speech is often illustrated with flashlight pictures or the like.

And for this same reason, too, *the movies have an extraordinary hold on the masses:* If the speeches of all statesmen are in agreement with the moving pictures of the occasion, and if the press and the radio are likewise in agreement, it is no wonder that ever-increasing masses of people fall prey to a particular suggestion. Indeed, one wonders why, in spite of all these suggestions, there are still individuals who can remain free of their effect.

Various circumstances and factors make the movies one of the most important means for mass suggestion. The price of admission is low and fits the pocketbooks of the masses. And they can attend the movies at any convenient time of day, for the doors are nearly always open. In the movie theater itself only the screen is illuminated, while the auditorium is dark or at most dimly lit. The setting is

perfect for the movie-goer to lose himself in what is flashed on the screen, since his attention is not distracted by any other appeal to the senses. He concentrates on the picture and by so doing becomes fertile ground for suggestion.

Now assume that in several scenes in the picture there are members of a foreign nation who are portrayed as scoundrels. The movie patron, ripe for the workings of suggestion, will easily be led to believe all members of that nation scoundrels, since *he, like all of us, is inclined to generalize*. It is quite probable that you yourself are ready to like or dislike members of a certain class or nation or race, because you have had a pleasant or an unpleasant experience with one or two of them.

What holds true for the movies naturally holds true for the *theater*. The higher price of admission makes for a smaller audience, but the greater festivity attendant at a stage play increases the suggestibility of the masses. The theatrical producer, who is wise in the ways of the theater and knows how great a factor environment is in the success of his play, pays particular attention to decoration, color, lighting, etc. He also takes care to "fill the house," even if he has to issue passes, for he knows that the size of the audience is important. An auditorium well filled before the curtain goes up suggests an enjoyable evening in store for the theatergoer.

The lighted stage is the focus for concentration, just as the screen is in the movies; in addition, the actors have a suggestive effect on the masses if they have talent, since they are there in person. A well-acted play, in such a setting, will never fail to have a suggestive effect on the masses.

Books have a suggestive effect on the masses if they are written in so vivid a style that they seize the reader's imag-

ination. Every book, whose train of thought can be followed with attentive concentration, has some decided effect on the reader, and I have never seen a better motto in a book than the following: "If books cannot make a man good or bad, they can nevertheless make him better or worse."

Finally, among the factors which make for mass suggestion, we must not overlook the *Church*. For centuries it has used all possible forms of suggestion simultaneously, to lead people in correct paths of living. Optical suggestion is used in the lofty architecture of the great cathedrals, especially those in Europe and notably in Italy. There is further suggestion to the eye in the twilight dimness of the interior, enhanced by candlelight. Acoustical suggestion is furnished by the music of the bells and earnest, devout choral singing, while the narcotic fragrance of incense supplies the suggestion to smell. All these, taken together, plainly show how mass suggestion can be used to nurture and develop the best and noblest traits in mankind.

The mass thinks in primitive fashion. If you want to study its suggestibility, choose as a laboratory case someone who is very primitive—a completely uneducated man or a little child. Explain logically to a little child who wants his Teddy Bear or some other toy why his request cannot and should not be granted. You may be successful in your explanations for a few minutes, but without the slightest doubt he will voice the same desire again, and in a stronger form because he repressed it in the meantime. The very same holds true for the primitive thinking of the masses. Every logical argument is utterly useless because it appeals to the mind instead of the emotions.

In the twenty-one years between 1882 and 1903 there were 3327 lynchings in the United States. In a majority of

these cases men opposed to lynch law tried to explain to the seething mob that the victim had not yet been proved guilty and that it was more humane, wise and sensible to put him on trial in court. These arguments were all logical, and because they were logical they had no effect on the mob.

In Europe, during the Middle Ages, more than 100,000 women and girls were burned as witches, more than 34,000 in Spain alone. The most important characteristic of a witch was supposed to be her alliance with the devil. Sober reflection should have led to the conclusion that it would be dangerous to kill a colleague of the devil if the devil really had power as people believed. But an argument of this sort is logical and because it is logical it would have had no effect on the wrath and vengeance of the mob.

Now let us try to form a picture of methods which can work suggestively on the masses. We already know we can avail ourselves only of such things as are convincing and thereby suggestive to ourselves. Therefore it follows that people who themselves doubt, fret, and reflect are not capable of affecting the masses. A man who is himself in doubt will in some way disclose this very doubt, even if it be by merely explaining how he settled this doubt to his own satisfaction. But this is again an argument and, as we know very well, arguments fail in mass suggestion. So we come to the conclusion that *the primitive man of action is more suited to set himself up as leader than the thinker and philosopher*. Cæsar, Alexander the Great, and Napoleon were men of action. They believed in their exploits and never had any scruples or moral twinges in doing as they planned. *Since their own thinking was primitive, they could influence the masses and carry them along by primitive slogans*. The words of Napoleon before the battle near

the Pyramids are still famous: "*Soldiers, forty centuries are looking down upon you.*" A logical mind would say the age of the Pyramids had absolutely nothing to do with the size of the army, the plan of action and the battle array of the French forces. It would further realize that inspiration furnished by the venerable age of the Pyramids would hold for the opposing army as well, since it was fighting on the same battlefield. But if anyone had had the opportunity to say these things in answer to Napoleon's battle-cry, they would certainly have been utterly ineffective.

Obviously there must be something which can be used in place of logic in generating powers of suggestion. This something is *repetition*. Not only politics but commercial propaganda is very conscious of this as a means for mass suggestion. The merchant or manufacturer who does not advertise his merchandize by logical arguments uses repetition instead. He knows he can win customers in time if he constantly calls their attention, by advertisements, letters, folders, posters, and the radio, to the indispensability of his product for every citizen in the country.

The politician, who avails himself of all methods of propaganda in even greater variety, knows that lies need only be repeated often enough to become unquestionable truth in the imagination of the masses. "*Semper aliquid haeret*" (something always sticks) is never truer than in mass suggestion, if it is repeated at strategic intervals of time and in suitable doses. When the masses hear an improbable or unbelievable statement for the first time, we may assume many of them more or less struggle against believing it. *But if the same statement is repeated day after day in public speeches, if it is spread by a subsidized press and relayed on the radio, in the movies and theaters, the critical faculty gradually succumbs.* Even the individual, to

say nothing of the masses, does not realize that all these statements in the final analysis come from the same source. If a lie not only is repeated in public speeches but also appears in different aspects in books and articles, if it is strengthened by illustrations and pictures presumably authentic, even the critically minded person is inclined to agree in time that there must be some truth in it. The masses, however, are much more easily and quickly deceived than the individual and are ready to believe the most stupid assertion if it is *repeated often enough* and drummed into them.

Of course, oft-repeated slogans must not be met with other slogans. Suggestive infiltration of ideas demands that the masses always hear one and the same thing and have neither time nor opportunity to compare what they have heard with contrary views. The recognition of this basic principle no doubt induced the *totalitarian states to prohibit any sort of discussion at public gatherings*. The exchange of ideas and the comparison of differing opinions invite *logical thought and appeal to reason instead of the blind acceptance of propaganda by repetition* and the suggestive appeal to emotions, instincts, and impulses. *The logical weighing of reasons* has, however, been a *democratic principle* from time out of mind, for it is natural, when we have two opposing arguments, for one to win a majority over the other. *Wherever no value is placed on the majority, no value can be placed on argument and counter-argument* and on logical conviction. In the totalitarian states, mass suggestion takes their place, and it uses all the means of suggestion described above.

And then we must also consider contagion, which I have already mentioned as a means of suggestion along with slogans and repetition.

When a theater catches on fire, more persons usually are hurt in the panic than by the flames. In a battle, if a few soldiers start to flee, they infect the rest with their fear. The reverse of the picture is true, too, for the example of a few brave officers can inspire an entire regiment to the attack.

In Schiller's *Wallenstein*, when several of Wallenstein's regiments deserted and went over to the Kaiser, they inspired his entire army to do likewise.

So it is no wonder if a few ardent adherents can easily carry over a speaker's or leader's convictions to the great mass in the audience. Man is a gregarious animal and can no more avoid contagion in general than a sheep can keep from following the bell-wether, even if it be over a precipice.

The problem of mass suggestion is therefore quite different from that of the individual. But it is absolutely necessary for us to know the problem if we want to understand the workings of politics and propaganda, which otherwise remain inexplicable.

It is no exaggeration to assert that no war and no revolution is possible without mass suggestion. It makes no difference, as in the case of the individual, whether the suggestion is the result of conscious or subconscious thought. The groundwork is usually laid subconsciously and then the suggestions pointing to the desired goal are made consciously. The great tide of immigration from Europe, caused by the European revolutions from 1789 and 1848, *unconsciously spread the basic ideas of liberty, equality and fraternity among Americans*. These basic ideas broke the ground for the thought of freedom for all people, even the slaves. When the Southern states, for financial reasons, set themselves against this conviction, the leaders

in the North made use of consciously suggestive means, such as newspapers, brochures, pictures, articles, and books. The book, *Uncle Tom's Cabin*, was a very conscious means for strengthening the suggestion that slavery is inhumane. Abraham Lincoln's consciously chosen campaign slogan was "*No more slave states, no more slave territories.*"

These suggestions, repeated and reenforced in this fashion, were strong enough to draw the entire North into war and victory.

This closing example should suffice to show that it merely depends on the nature of the leader whether mass suggestion leads to evil or, as in the case of Negro emancipation, to good.

PART FOUR

HYPNOSIS

CHAPTER XXXII

QUALIFICATIONS OF A HYPNOTIST AND A SUBJECT

Now let us turn back from mass suggestion to individual suggestion. Suggestion, as we know, is directed at the *sub-conscious mind* of the subject, and to be effective it must eliminate the usual consciously functioning thought-processes. Suggestion is like a subterranean tunnel leading to an armed fortress. It enters the fortress without touching the surface of the earth (in this case the subject's conscious mind). The more complete this elimination of consciousness is, the more successfully the suggestion works.

The climax is therefore reached when the conscious control of the subject no longer functions at all; that is, when his conscious mental processes have been completely eliminated. When this condition is arrived at, we speak of "hypnosis."

The word hypnosis comes from the Greek *hypnose* and literally means nothing more than "sleep." In practice, however, it has come to mean a state resembling sleep, into which one person is induced by another. It differs from normal sleep in that certain relations are maintained between the hypnotist and his subject.

From foregoing chapters we know that in every suggestion passed from one person to another the powers of *concentration* of the sender play a decisive role. Since hypnosis represents the highest degree of suggestion thus far known

and acknowledged by science, it is self-evident that the ability to concentrate is the most important characteristic of a good hypnotist. To this must be added a strong will, an impressive bearing, poise, and patience.

The ability to concentrate is poorly developed in most people, and therefore comparatively few persons are able to practise hypnotism. In the first part of this book we saw to what an astonishing degree we can develop the ability to concentrate. Here we have a further example of how closely these things are related and how direct the way is from mnemotechny and concentration to suggestion and hypnosis.

The ability to concentrate is essential, for the hypnotist must not let his thoughts be diverted for a moment while he puts the subject to sleep. A person can never put another in a deep degree of hypnosis if he has not learned to concentrate his own thoughts on a certain fact, in this case on the sleep of the subject.

Then we must add to his necessary equipment a certain cultivated patience. It is absolutely necessary to adapt oneself to the special ways of the subject, or in medical cases to the patient. Since people differ in every respect, they differ in falling asleep, especially when their sleep is induced artificially for the first time. In this instance it is the task of the hypnotist to imagine himself in the place of the subject, observe the slightest change in him, and repeat his commands with unending patience. These commands may not be followed at first, but after many repetitions they will ultimately be carried out.

The hypnotist must always exhibit a dignified calmness; his bearing must be friendly but very assured, and he must be certain he has plenty of time to carry out his suggestions. Any sort of cut-and-dried treatment is a mistake.

Even though practice and routine are essential, they must never lead to an automatic, stereotyped method of suggestion.

The hypnotist must never let his self-assurance be undermined. He must remember that the subject's subconscious mind, like that of anyone else, is much more sensitive to impressions from without than is his conscious mind. The subject, in passing from waking to sleeping, would notice the hypnotist's lack of self-assurance even though it might not be obvious to others.

This is one of the reasons why older people are more successful than younger in practising hypnotism. Their authority is generally greater and their self-assurance has been developed by the experiences of many years. This fact also explains why the hypnotist's work collapses when the subject loses faith in him. Professional circles know how Abbé Faria's extraordinary hypnotic power, demonstrated for many years in Paris, broke down completely when a sham patient made him a laughingstock during a public demonstration.

As far as the subject is concerned, laymen always *confuse suggestibility with weakness of will*. Logic proves these factors to be completely unrelated. Let us assume that a person of extraordinary will-power is sick with some complaint which he knows can be cured most surely by hypnotic treatment. He therefore goes to a physician and exerts all his will-power to let himself be put into a hypnotic sleep. If this subject's will-power, admittedly strong, is focused on hypnosis, it should undoubtedly induce sleep. His strong will is directed solely and completely on this state of sleep, first, because he wants to be rid of his complaint, and second, because he does not want to pay the doctor for a sitting which has no results. Actual practice,

however, proves his will-power of no avail if he is not susceptible as a subject. Weakness of will, on the other hand, does not necessarily imply susceptibility as a subject, even though individual cases may be obviously weak in will-power. Countless experiments have been made to prove this fact. For instance, Dr. Heidenhain succeeded in hypnotizing soldiers who were under specific orders from their commanding officers not to fall asleep. They had therefore set their wills very strongly against being hypnotized.

But with all this we have merely proved that *suggestibility has nothing to do with weakness of will*. There remains a much more difficult question. What does suggestibility really depend on, and how can one recognize susceptibility in the subject without an actual experiment in hypnosis? The answer is: It is easy to hypnotize anyone who has a *lively imagination*, who therefore can follow in spirit the suggestions given him and experience vividly what the hypnotist suggests.

People with strong imaginations are generally apt to indulge in dreams of wish-fulfillment, and they hold tight to their dream world. Their suppressed desires are carried over into their dreams.

The ability to transfer one's emotions to an external object is called *objectivism* in professional parlance, and notable research studies bearing on this topic have been made in late years by Professor Narciss Ach in Göttingen.

Ach defines objectivism as the ability to transfer to things, in a suitable manner, one's own inner experiences and sensations. As a consequence of this transference, the things of the outer world are classified as pleasant or unpleasant, loved or hated. The person of the hypnotist and even the subject's own body belong to things of the

outer world. Only the subject's own personality as such, its desires and knowledge, its imagination and dream world belong to things of the inner world, to his ego.

People who can readily feel the things of the external world, whose *imagination*s are well enough developed to assimilate outside impressions quickly, are called extroverts. It is among them we should look for good hypnotic subjects.

In contrast to them are introverts, the people who are absorbed in themselves and find difficulty in establishing the right contacts with the external world.

The extrovert is more adaptable and can always fit himself to the actual circumstances of the outer world. He is therefore generally more successful in life, provided that too many obstacles are not put in his way.

The introvert is far less adaptable; he is repressed by stronger, earlier experiences from which he cannot so readily free himself. On the other hand, he is more persistent than the extrovert in his pursuit of a goal, once he has set it.

The extrovert usually has a happy disposition. His bodily movements are natural, expansive, and easy. The introvert is often dissatisfied, and cold and aloof. His movements are stiff and unnatural.

Since the extrovert can readily adapt himself, he may—unconsciously and with the greatest of ease—carry out suggestions directed during hypnotic sleep. But the introvert always suffers from a certain cleavage between his ego and the outer world. This cleavage, or it may be tension, is readily transformed into resistance to suggestion. Here again, this resistance is completely independent of any conscious volition or “willing.”

In support of Ach's theories, Professor Mierke recently

made some effective experiments in carrying over feelings to the things of the outer world, and he thereby tested suggestibility. The most interesting of his experiments are those made with children. He gave the children little sticks of different colored glass—red, blue, green, yellow, gold, silver and colorless—and let them place these little sticks in a row according to their “likes.” In most cases the children began with the gold and silver sticks and ended with the colorless ones, with the various colors differently “liked.” Then he set tasks for the children to do, and arranged—unknown to them—that the pleasantest tasks should be performed with the colors they liked least. Vice versa, they were to use those they liked best for the activities they found most unpleasant. Mierke made many of these experiments and repeated them on several consecutive days. Then the children were told to place the little sticks in a row again, according to their likes.

Many interesting differences were brought to light. Some of the children placed the sticks in the same order as they had in the first assignment. The activities seemed to have had no effect whatsoever on their likes. These children had remained consistent.

Some of the other children, however, showed a completely different order of preferences. They now preferred the sticks with which they had undertaken pleasant activities. These children had unconsciously carried over their feelings during the experiments to the colors of the little sticks. To state the matter scientifically, they had *objectified* their feelings and the ones who had done so were the extroverts; they were the suggestible subjects, while the introverts remained resistant to any suggestion.

Then another experiment was undertaken with the same idea in mind, but under different conditions. The children

were given little sticks of three colors—red, green, and yellow. They were told to lay them over patterns of the letters in the alphabet in such a way that the vertical lines would always be formed of red, the horizontal always of green, and the diagonal always of yellow sticks. This task was carefully supervised and mistakes had to be corrected. Similar tasks were assigned on several consecutive days. In each, the sticks had to be used according to their colors. A few days later the children were given new patterns and set to the task of covering these lines with a new set of colored sticks. But this time they were told that there was no color rule to follow. The patterns themselves were naturally black or of a neutral color.

Here again the final assignment, in which the children were allowed to follow their own preferences, disclosed differences similar to those in the first experiment. Some of the children had completely adapted themselves to the assigned order of colors, and now, when they could follow their own preferences, used the red, green, and yellow sticks in the same way as in their assignments. Others, however, followed their own preferences and chose an entirely different order.

The conclusions are the same as for the first experiment: Those children who adapted themselves so readily to the assigned order of colors that they remained with it when they could have exercised free choice were the suggestible ones, who would be easy to hypnotize. But those on whom the assigned order had had no effect and who discarded it when they had freedom of choice, showed themselves resistant, or difficult to hypnotize.

The results of all these experiments prove what I stated above, namely, *good subjects can be found mainly among the persons who are inclined to adapt themselves to their*

environment, who have an exceptional imagination, and who, thanks to this imagination, can effortlessly carry out the hypnotist's suggestions. Important as such experiments are from a theoretical standpoint, they are seldom made in everyday life because of lack of time.

I have found it sufficient, in testing for suggestibility for purely practical purposes, to make the experiments I outlined at the beginning of the section on Suggestion. If I let the subject hold out his hand and place it on mine, and if I then make the suggestion that his hand is getting heavier, after a few minutes I get a definite impression of whether the suggestion has worked or not. In positive cases, I am dealing with a good subject; in negative cases, with one who is resistant.

Chevreul's pendulum, which I discussed in detail, offers a further means of testing a person's susceptibility to hypnosis. Since we know hypnosis is a product of suggestion, all the experiments which I described in the section on Suggestion can plainly be used in testing susceptibility to hypnotic sleep.

Aside from these experiments, we can say that sick people generally are more difficult to hypnotize than well ones, because their bodies are in some way out of order. This is self-evident, because even natural sleep comes more quickly and soundly to a healthy person than to a sick one. As inner peace is essential for the subject, it is difficult to hypnotize a person who is overworked, nervous or excited. Inner peace must first be restored before one can think of putting him into a hypnotic sleep.

With all this, we see that neither qualifications for hypnotizing nor susceptibility to being hypnotized can be explained by a few phrases. Suggestibility and the ability to be hypnotized are not objective characteristics at all, as,

for instance, good or poor eyesight or defective hearing. The relationship between hypnotist and subject is extraordinarily important. The person who cannot be hypnotized by Hypnotist A may be a marvelous subject for Hypnotist B. The reasons why this is so I discussed previously. They are largely determined by the way the person of the hypnotist appears to the subject in his imagination.

The number of persons who are susceptible to hypnotic influence is almost always underrated by laymen. Dr. Wetterstrand informs us that he treated 3148 persons by hypnosis in his medical practice over a period of three years, and that of these there were only 97 whom he did not succeed in putting to sleep. Schrenck-Notzing places the number of persons susceptible to hypnosis at 90 per cent; and the percentages of Forel, Liébault, and Troemner are somewhat higher. But we must remember that these percentages include those cases, considered positive, in which hypnosis was not successful at the first attempt, but perhaps only at the third, fifth or tenth. We must note also that for medical purposes it is sufficient to induce a very light sleep, called *somnolence*, not to be confused with a deep sleep, or *somnambulistic* hypnosis.

Among the greatest obstacles to the success of a hypnotic treatment are excitement and fear on the part of the patient or subject. The first sitting in hypnotic treatment is strange and novel, and anything novel excites us. Consequently a person will find himself in a certain state of excitement at his first hypnotic treatment. It is the hypnotist's first duty to calm him.

Sometimes the patient is too excited to be calmed in ten or fifteen minutes. In this case, the first attempt at hypnotic treatment often fails, although the second and subsequent treatments succeed. The first sitting should there-

fore be confined to accustoming the subject to his unusual situation, in order to lighten any tension. It should not last longer than fifteen or twenty minutes. If at the end of twenty minutes no contact has been established, it is advisable to end the sitting and have another the next day or a few days later.

While witnessing examples of successful hypnotism, one often hears the confident remark, "That couldn't happen to me," and sometimes the added phrase, "Especially if I didn't want it to." One remark is as stupid as the other. The mistake lies primarily in the fact that people are inclined to believe only what their own experience teaches them, and they have had no experience of hypnosis. The remark "especially if I didn't want it to" shows a confusion, quite common in life, between the sphere of the will and that of the emotions. Later we will prove how little the will has to do with being hypnotized or with the sensitivity of the subject.

But before we go into these matters it is necessary to define certain terms used in discussions of hypnosis. One of the most important is hallucination. This means that the subject sees, or thinks he sees, certain things which do not exist in reality (positive optical hallucination), or that he no longer sees things which do exist in reality (negative optical hallucination). Your own dreams will make these concepts clear to you. Every dream picture represents a positive optical hallucination, for you see things in your dreams which do not exist in reality. On the other hand, you do not, during your dreams, accept the reality of things actually there in your room, not even the bed on which you are lying. Both kinds of hallucination are in themselves quite common, but it is remarkable that such hallucina-

tions can be induced by a hypnotist, directing the phantasy of his subject according to his will.

Up to this point we have confined ourselves to optical hallucination, that is, perception through the eye. Naturally, the same things hold true for perception through the ear or any other of the senses. It is therefore a simple matter to give a subject the following suggestion under hypnosis: "The water in the glass you are holding is changing into champagne and you are drinking it with great satisfaction," or "The water is changing into tea, so hot that you cannot drink it without blowing on it to cool it."

In both of these cases it is not only the subject's sense of sight but primarily his sense of taste which is being controlled. It is a question, in both instances, of influencing the senses of the subject. So it is not strange that experiments of this sort are comparatively easy to undertake.

Other terms frequently used in the discussion of hypnosis are somnambulism and trance.

Somnambulism is the deepest degree of hypnotic sleep, which we will discuss later. The term is derived from the Latin "in somno ambulare" (to walk in sleep), or sleep-walking. In the practice of hypnotism, however, the term somnambulism has acquired a different meaning. In common usage "sleep-walking" describes the state best exemplified in Shakespeare's *Macbeth*, while in professional usage somnambulism is reserved for the deepest degree of hypnotic sleep, without the connotation of actual "sleep-walking."

By the term *trance* we mean every condition, artificially induced, in which the subject is not fully conscious of his actions. So the term *trance* is used for a state of sleep, induced by another person or by the subject himself, during which his personality is replaced by that of another.

The term *posthypnosis* is also important. If a subject, as in the case described above, is given the suggestion that water tastes like champagne, following out this suggestion is a mere matter of obeying hypnotic command. But one can change this experiment by telling the subject he should suddenly feel thirsty at a certain time after awakening, or that he should, at that time, believe the water to be champagne. In this case the command is *posthypnotic*—one for the subject to carry out after hypnosis, that is, at a time when he has awakened.

Finally we have the expression *amnesia*, best translated as “loss of memory.” In hypnosis, the term means that the subject, on awakening, does not know what happened while he was asleep. We usually encounter such loss of memory in every deep degree of hypnosis. Its presence is indispensable to the success of every posthypnotic experiment.

CHAPTER XXXIII

EXPERIMENTS UNDER HYPNOSIS

THE remarkable things which happen under hypnotic sleep evoke considerable interest and surprise from laymen. It is singularly disturbing to see a person talk, write and walk about, obviously unconscious, automatically obeying the commands of another, and then have no recollection whatsoever of his actions after the termination of his hypnotic sleep.

The simplest experiments are naturally those connected with the feeling of heaviness which the subject experiences in falling into hypnotic sleep. In a very light degree of hypnotic sleep, the hypnotist can stretch out the subject's arm and suggest that the muscles of his arm are so tense he cannot bend or move it in any direction. If he then puts the subject's hand on his own, he clinches the suggestion that the arm is so heavy he cannot remove it.

It is equally easy to suggest that his hands are manacled. To do this, let the subject fold his hands and clasp his fingers. Then make the following suggestion: "You feel the palms of your hands pressing against each other and notice how tense they are growing. When I pass my hand lightly over yours, I feel that the palms are practically inseparable. Your fingers are clasped as tightly as though they were grown together. Now, try as you will, you cannot force your hands apart."

Other experiments can be added to this initial one, all

based on the subject's relaxation and his feeling of heaviness. For instance, if you suggest that he can no longer raise himself from his chair, he will be unable to do it. Or on command the subject will suddenly stop in his stride and be unable to lift his feet from the floor. The suggestion that he is incapable of moving a chair out of the way is sufficient to keep him from accomplishing that routine movement.

Finally, so-called automatic movements belong in this category. For instance, one can set the subject's arm going in a circle and at the same time give the command that he can no longer stop this movement by himself. The suggestion may run somewhat as follows: "I begin to move your arm in a circle and you feel your arm continuing this movement by itself. You notice your arm making this movement of its own accord and you can no longer control it. If you try hard to hold your arm still, you will not succeed: it will continue its movement independently.

All these experiments succeed in the lightest degree of hypnotic sleep, but to control speech and sensations you need a deeper degree. To control speech effectively, for instance, you can give the subject the following command: "You cannot count beyond 7." He will then begin with 1 and unhesitatingly count up to 7. But then, if the suggestion has worked, he will be unable to count further, try as he will. In the same way you can suggest that he will not be able to pronounce certain letters of the alphabet.

This experiment also proves whether he is in a deep degree of hypnotic sleep or is merely feigning hypnosis. If you suggest to the subject that he cannot pronounce certain letters of the alphabet and then tell him to recite a poem, or if you carry on a conversation with him, it is

wholly impossible for him to follow the original suggestion if he is feigning hypnotic sleep. Under normal circumstances a person cannot think quickly enough to leave out certain letters, since the rhythm of speech demands them. The subconscious is noticeably quicker in this respect, and the subject will never use the forbidden letters, let the conversation be ever so long. It does not matter whether one tells him to omit certain letters or to substitute others for them.

In the same way you can influence sensations. If you make the suggestion, "You are very thirsty," the subject will immediately lick his lips or make some other sign of thirst. He may even ask for water, if his thirst is intense enough.

You can also evoke fear, fright, and other states of excitement. To do this, you can use one of two methods. The hypnotist can either make a direct suggestion for evoking the sensation and say, "You are in great fear and are thoroughly frightened," or he can picture a reason to evoke the desired sensation in the subject and say, for instance, "You see a wild beast coming at you." The latter method is usually the more effective.

In effecting cures of any sort it is especially important to suggest insensitivity to pain. The subject then will feel no pain of any sort, even if you stab a needle deep into her or his arm.

We will return to this phase of the matter when we discuss the relationship of hypnosis to medicine. I merely mention it here to show that headaches, toothaches, and the like can be relieved by hypnosis.

Hallucinations during hypnotic sleep are especially important in breaking bad habits, and we shall discuss these in greater detail later. In the case mentioned above, if the

hypnotist should say, "You see a wild beast coming at you," he is evoking a *positive optical hallucination*, since he is suggesting that the subject see this wild beast which in reality does not exist.

On the other hand, we have a *negative optical hallucination* if the hypnotist commands the subject *not* to see a person present in the room. Such an experiment astonishes laymen, for it is odd to observe a subject who sees and speaks to everyone in the room except one person, whom he neither sees nor hears. It is even more odd if Mr. X, whose disappearance has been suggested to the subject, touches him in any way. The subject feels the touch but does not know where it comes from and usually makes a slight gesture, as though brushing away a fly.

I have often made this experiment: Mr. X picks up some object in the room, say a chair, and puts it in another place. The subject's behavior varies greatly, depending on his character and temperament. Some follow the apparently inexplicable movement with great interest, with little agitation, as though it were the most natural thing in the world for a chair to move about without human aid. Others are very obviously amazed, and even show signs of fear, or they laugh, because they think someone is playing a practical joke on them. In the latter instance, they often spontaneously look for a concealed string which might have been used to move the chair about.

Here is another variation of this experiment with the transparent Mr. X: Mr. X stands directly in front of a door, and the subject is commanded to open the door. He collides with the obstacle—Mr. X. Again the results vary greatly. Some attempt to carry out the command by force, and tug and pull at the door, so that Mr. X feels the impact; others are afraid of the obstacle they cannot

see, and therefore abandon the attempt to open the door and hesitate to carry out the command any further.

All in all, laymen are often amazed at how little the subject is perturbed about the most extraordinary matters. Independent movement in an inanimate thing usually is of no more moment to him than if one suggested that hitherto ice-cold water suddenly was transformed into boiling hot tea. The amazement of the spectators quickly abates, however, when they realize that they have witnessed similar improbabilities in their own dreams without getting at all excited about them. It is a common dream-experience to have a person with whom we are conversing suddenly turn into someone else, and such transformations do not disturb us. The reason for this lies in the fact that in natural sleep, as well as in artificial sleep or hypnosis, logical thinking is largely suspended. The subconscious is not likely to think rationally, and since logic is wanting, it is impossible to judge what is unreal or improbable.

This explains a whole list of experiments which seem impossible to the ordinary observer and make him doubt the authenticity of hypnotism. The experienced hypnotizer, of course, knows exactly what occasions them.

For instance, I have often given a subject this suggestion: "The table (standing in the middle of the room) is no longer there." If I then ask him whether there is anything in the middle of the room, the answer is invariably "No." If I give the command to cross the room diagonally, very few of my subjects collide with the table; that is, most of them circle around it. Laymen are immediately inclined to look on the experiment as a fake, since the subject has said he did not see the table. The logical result, if the subject really did not see the table, would be for him to collide with it.

But this matter is not so simple. He has followed out the suggestion not to see the table quite faithfully, and really does not see it. But the small part of his conscious mind which is still functioning is enough to tell him to avoid collision. The logic of the subconscious mind is simply not strong enough to reason thus: "If I go around the table, it must be there; therefore I can also see it." A normal person, in full possession of his faculties, could draw this conclusion, but such reasoning is too difficult for the subconscious mind.

Experiments of this sort could be cited by the hour, but I shall limit myself to one more, which always impresses laymen as fraudulent.

I can render any of a subject's senses useless by making the suggestion: "You cannot see, hear, or feel anything." If I suggest that the subject can no longer hear a single sound, he will not hear any noise or any voices at all, not even my own. But when I finally give the command to wake up, the subject, hitherto deaf, will obey it and will wake up as punctually and pleasantly as usual.

This seems to be a contradiction, but only to those who do not understand the faulty association-processes of the subconscious mind.

CHAPTER XXXIV

HYPNOTISM AND MEMORY

HYPNOTISM and memory have many things in common, as we know. The ability to concentrate is as necessary for a good memory as for hypnotism. Hypnotism has opened a store of information on the way and manner in which the memory functions. Now we shall consider hypnosis and memory from two important new points of view and set ourselves two interesting questions:

1. How does a person's memory function after hypnotic sleep, in respect to what has transpired during hypnosis?
2. Can a recollection of forgotten events be evoked by hypnosis, and can a remembered fact be wiped out by hypnosis?

The first question is the easier to answer. As a rule, every deep degree of hypnotic sleep is accompanied by loss of memory. Only when the hypnosis is light can the subject later recall what happened. This condition is again analogous to the dream in natural sleep. We remember dream-occurrences only if our sleep was light or restless, and a recollection is impossible if we had the dream while we were in a deep, sound sleep.

But it is especially interesting to note that during hypnosis a subject can recall what transpired in an earlier hypnotic sleep, even when the recollection has completely disappeared in the interim. We can explain this fact somewhat as follows: These occurrences lie in the subcon-

scious mind, that is, below the threshold of consciousness. While in his normal state of wakefulness, the subject cannot reach what lies below the threshold of consciousness, during a later hypnotic sitting his conscious mind is again pushed aside and the things which previously have lain below the threshold of consciousness are again brought to light.

This recollection of occurrences is extremely important from a legal point of view, since it may, through a new hypnotic sleep, disclose criminal actions committed by the subject during an earlier hypnosis. Even in cases in which recollection does not come of itself, it can be evoked by suitable commands from the hypnotist.

The second question is perhaps equally important: Is it possible to effect a recollection of occurrences by hypnosis?

This question cannot be answered by a terse "yes" or "no," because much depends upon the subject's suggestibility and the degree of his hypnotic sleep. But this at least is certain: If these two factors are favorable, it is possible to recall an occurrence which lies below the threshold of consciousness, or in common parlance "is forgotten."

One of the most interesting examples of such an instance happened while I was practising law:

I was called to defend a young man who was accused of theft, said to have been committed during the evening of May 18. His first trial was held on August 12, and he could no longer remember, since he kept no diary, where he had been during the evening of May 18. You would no doubt be in the same situation if you were suddenly asked where you were on a certain night some three months back. The young man was in grave danger of being convicted, since one of the witnesses was convinced he recognized my client as the thief. I had taken the brief for the

defense, and tried in vain to establish an alibi for the evening in question, since my client, no matter how hard he tried, could not recall his movements on that particular day.

Finally we agreed to try hypnosis, in order to stimulate his faulty memory. As soon as I was sure his hypnotic sleep was deep enough, I asked him where he had passed the previous evenings, then the evenings of the previous week, and gradually worked back to several evenings in the month just gone by. Then I broke off the sitting, because I know one must be careful in matters of this kind and not demand everything at once. In further hypnotic sittings I actually succeeded in working back to the evening in question. My client finally told me, while he was under hypnosis, that he had spent the evening at a rather large party at Mr. X's house. After the memory had once been recalled, he could give me the names of other persons present at the party.

I reported all the circumstances to the district attorney. First Mr. and Mrs. X offered their testimony, and then various guests. The host and hostess testified, "It is true, we gave a rather large party in May, at which the defendant and the persons he named were present. But we cannot swear it was the eighteenth of May; it might just as well have been the seventeenth or the nineteenth or some other day." This testimony was naturally not of much use for the defendant, because the crucial point was the date May 18 and not any other date in the same month. The first three guests who testified agreed in general with the X's. They all remembered the invitation and the party around the middle of May, but no one was sure of the exact day. The fourth guest, however, testified with conviction. He said: "*It was the eighteenth of May.*" When he

was asked how he could be so sure of the date, he explained: "I had to leave the party rather early, over the protests of my host and several friends, because I had certain things to attend to for my father's birthday celebration the next day. Since my father's birthday is the nineteenth of May, I am positive of the date."

At that the father was called on the telephone and asked to bring in his birth certificate or passport. *His birthday really was May 19.* In addition, the host and hostess as well as several guests *confirmed* the fact that the last witness had left the party early, saying he had certain things to get for his father's birthday party.

This testimony completed the chain of evidence in my client's favor, and *the charge was dropped.*

The whole case proves that it is sometimes possible to intensify the recollection of a person by hypnosis and to bring over the threshold of consciousness things seemingly forgotten. The case also shows how at times a person's freedom and reputation are dependent on the success of such an experiment.

Besides these things, the case shows that hypnosis and psychoanalysis often work in conjunction. It is, of course, a well-known fact that Freud and Breuer, the founders of psychoanalysis, started originally with hypnosis, although they abandoned it in later years. Psychoanalysis effects cures by making unpleasant, repressed complexes "known" or "conscious." Once the patient is conscious of them, they can have no harmful effects on him, or he can at least do something about them. To make these complexes "known," Freud and his followers question their patients while they are awake.

I myself and many others insist that it is more practical and more efficacious to undertake the questioning while the

patient is in a hypnotic sleep. It is more practical because it spares him the embarrassment of answering questions which often touch on delicate matters. It is usually more efficacious because one can probe into the recesses of the subconscious, which the patient himself could not do while fully awake, try as he might.

To illustrate this point we have another example: A few years ago a practising physician sent a young man to me who could never go walking in the country or even lie on the grass with his friends, because he had a great fear of snakes, a fear apparently unfounded, yet one he could not rid himself of. Persuasion was of no use; explaining that there were no dangerous snakes in the whole countryside did not help, either. We have discussed these matters in enough detail to know that logic is apprehended only in the conscious mind but generally cannot reach the subconscious.

By hypnosis I learned that as a child he was once terrified by a reptile which suddenly struck at him. That it most likely was merely a lizard is entirely beside the point. *The subjective impression on the child is the point*, and to the child the reptile was a snake.

After I had thus succeeded in laying the ground for making the fear of snakes "known," it was a comparatively easy matter to uproot this fear, and the circumstances on which it was based, at a second hypnotic sitting.

Whether a fact, unpleasantly remembered, can be wiped out by hypnosis, can be answered only with a qualified statement. If circumstances are favorable, it is possible to achieve good results. How happy the result may be, I should like to illustrate with an example from my own experience:

A young woman had lost her brother at the Battle of

the Mazurian Lakes, during the World War. She had been told that many soldiers had perished in the swamps surrounding the lake. They had not seen the swamps in time, but had thought them an extension of the meadows, had advanced across them, and had sunk helplessly into their depths. This young woman could not forget the picture. In her imagination she saw swamps everywhere and it had become an obsession with her. She could not be persuaded to cross any meadow, even when she saw friends and acquaintances in it, strolling about and picking flowers. All sorts of treatments were tried and had failed, and her physician asked me to try my luck with hypnosis. It is obvious that this case presented a different problem from the one just cited, the fear of snakes. In that case, the occurrence which called forth fear had been long forgotten, or rather repressed. In this case, the occurrence which called forth fear was too clearly present in memory, or rather, in the girl's imagination. Here the problem was to efface the memory and to *make her conscious of the fact that every meadow is not a swamp*. Even when she was under hypnosis I ran up against the greatest difficulties in the beginning. If I suggested that we were taking a walk together, she would follow willingly as long as she imagined herself in the city or even on a highway. But as soon as I introduced "meadow" in my suggestions, she stubbornly refused to go along.

Finally I succeeded, by suggesting that she was standing in the middle of a meadow, but on firm and solid ground, feeling perfectly well and happy. After a little initial resistance, this suggestion worked; after many fruitless attempts she was finally persuaded to walk a few steps and then cross the imaginary meadow. I suggested, then, that her brother had been struck by a bullet during the

battle, and with the help of this suggestion effaced the memory-recall of the swamp.

After a few subsequent sittings I succeeded in getting the girl to walk alone across the imaginary meadow. Once we had reached this point, she actually crossed a meadow when fully awake. Up to the present day she has not had a relapse.

Abeles and R. Stern have gathered much material on such cases. In countless instances, Abeles cured hysterical cases by bringing to light forgotten things which were the cause of the hysteria. Stern also succeeded, by using the same methods, in filling lapses of memory occasioned by drunkenness. Drunkards often cannot remember things which happened during their drinking bouts. It is therefore possible, and in many cases important, to bring "things forgotten" to light through hypnotic sleep.

CHAPTER XXXV

POSTHYPNOTIC PHENOMENA

WHEN certain commands for future acts have been given to a person during hypnotic sleep, we call such acts posthypnosis. It is upon the peculiar phenomena of posthypnosis that we may justly base the claim that hypnosis is extraordinarily successful in breaking undesirable habits and in determining legal cases.

The hypnotist can give his subject commands during hypnotic sleep to be carried out long afterward. The deeper the degree of hypnotic sleep and the less the commands affect the subject's routine of living, the more punctually and reliably he carries out these commands. If, for instance, I tell a subject: "Shortly after awakening you will feel thirsty and will ask for a drink," the suggestion is so easy to carry out that it will be followed in 99 cases out of 100. The subject, who will have forgotten completely the occurrences under hypnosis, will soon get very thirsty, and since thirst is quite natural, no inner conflict will arise when the time comes for him to express his desire.

This suggestion is equally simple: "A little while after you awaken, you will ask Mr. or Mrs. Y what time it is."

The matter becomes involved and interesting when one ties up the posthypnotic commands with hallucinations, or gives commands which the subject resists.

A posthypnotic command with hallucination occurs in the following experiment, with which I have invariably

been successful: I tell the subject, "When you awaken you will see a vase of flowers on the table (which is not there). You will walk up to these flowers, smell them, and ask one of the company if they are not exceptionally lovely."

As often as I have made this experiment, the subject always carries out the command and acts as though there really were a bouquet of flowers on the table. He is absolutely unable to differentiate between real and imaginary flowers.

Negative hallucinations work in the same way. I command: "A short time after you awaken, you will no longer see or hear Mr. X, who is in the room now."

The impression made on spectators by this experiment when the subject is under hypnosis is always one of intense interest. But when the subject follows it after the termination of his hypnotic sleep, the effect is deepened and gives rise to a number of questions, the chief one being: In what condition is the subject while he is carrying out the command? He is not asleep, since his eyes are open and his behavior is normal and natural. But that he is in some condition still connected with his hypnotic sleep is proved by his obedience to the command, and usually by the rather blank look in his eyes as he obeys the command.

In reality, he is in a condition between waking and sleeping, and we can make this general statement: The more closely the command is connected with the normal run of life (getting thirsty or asking for the time, etc.) the closer his condition is to normal consciousness. But the farther removed the command is, the closer his condition is to hypnotic sleep.

Quite a while ago I proved to a gathering of lawyers and doctors in Frankfurt-am-Main that absurd commands can be carried out by a good subject. I put a young lawyer into

hypnotic sleep and ordered him to call out, half an hour after awakening: "Long live the Frankfurt fire department!" raising his glass and draining it after he had spoken. This young man was very shy and seldom spoke in a gathering of colleagues of his own age, and hardly opened his mouth except in reply to a question when he was in company with older men. On the night in question the company consisted not only of his immediate superiors but also of the higher authorities—presidents of county courts and of the supreme court. Nevertheless, he followed the command punctually and in a loud voice. When several of the older men demanded, in apparent disapproval, why he made an uproar so unsuited to the sober tone of the company, he explained that the general mood seemed too solemn and earnest, and that he believed everybody would enjoy an added note of hilarity.

His explanation is typical of posthypnotic suggestions, being the direct opposite of one made in the subject's normal conscious state. Man, as a sentient being, is accustomed to carry out transactions which he can justify. In the example just cited, he was carrying out a posthypnotic command which in itself was foolish. Since he is accustomed not to act foolishly, he seeks an explanation not so much for the benefit of others present as for himself. He attempts to justify his conduct to himself, and consequently the most interesting attempts at explanation are made by the subject for foolish posthypnotic behavior. One can gauge the amount of intelligence he possesses by such attempts at explanation. But one must always remember the subject does not know that his behavior results from posthypnotic command. He always believes he is acting on his own volition and must therefore account for his apparently independent actions.

Posthypnotic commands can be set for a definite time (for instance, tomorrow afternoon at 4, do this or that) or can be associated with a stipulation of some sort. Here is a practical example of the latter:

I tell my subject, "Some time after you awaken, I shall light a cigarette. As soon as I do this, you will notice a mouse sitting on the floor. You are afraid of mice and you will jump up on the sofa." What happens in a situation of this sort is obvious: The subject, particularly, if the subject be a woman, becomes frightened and shrieks. She actually evidences the emotional reaction the sight of a real mouse would induce.

All such experiments throw a distinct light on man's freedom of will. The subject believes he is acting from free will, while not only the hypnotist but the entire audience knows that he is acting under the domination of another. This opens a wide field of speculation as to the number of our own actions which are dependent on outside influences, even though we cannot trace their source directly, as in the case of posthypnosis.

How long is posthypnosis effective? This depends not only on the degree of hypnotic sleep but also on the suggestibility of the subject. Successful experiments have been made which involved as much as a year.

In any case, the greatest precautions must be taken in all experiments which are at variance with the subject's sensibilities. If the actions are too absurd, they will cause the subject an inner struggle which may lead in certain cases to a feeling of depression. But even if this is not the case, results may follow which were not intended.

Forel tells us about a case in which he commanded a student one evening during hypnosis to pound him on the shoulder a certain time after he awakened. Although the

student was plainly in inner turmoil after he awoke, his respect for his teacher won out and he did not obey the command. The student left for home with the others who were present. Several hours later, in the middle of the night, he returned, asked to see the professor, and pounded him on the shoulder. When he was asked why, he explained he had such an overpowering urge to do so that he could not resist it.

All these experiments are useful in investigating posthypnotic phenomena, but they have no connection with practical life. They do, however, lead us to the direct utilization of posthypnosis where it can be employed in the immediate or distant future. It is simple, for instance, to relieve headache or toothache by hypnosis and at the same time make a posthypnotic suggestion that no pain will recur for a certain length of time.

But with matters of this sort one must be careful, remembering that one can relieve the pain but not the cause of pain. The tooth remains decayed or ulcerated and alleviation of pain is dangerous since pain is an indication of the fact that the tooth must be treated by a dentist.

I shall return to these matters in the chapter on "Hypnosis and Medicine."

CHAPTER XXXVI

BREAKING HABITS

WE come now to the important use of posthypnosis in breaking undesired habits, as, for instance, smoking or drinking.

When there is plenty of time, I spend the first sitting in acquainting myself with the general suggestibility of my subject and his ability to carry out posthypnotic commands. These two things, as I have already pointed out, are not identical. Some very suggestible persons cannot follow out posthypnotic commands; others, who are very difficult to put into hypnotic sleep, follow posthypnotic commands very readily.

At the second sitting or in the interim between the first and second sittings I let the subject *name something whose taste is especially offensive* to him. If he names castor oil, for instance, at the second sitting the following scene is played:

I: "Have a cigarette. Smoke it." (I give him a real cigarette, let him draw a few puffs, and ask him if it tastes good.)

Subject: "Very good."

I: "Now recall very vividly how castor oil tastes." (I wait until this suggestion has registered, a fact which can be read in the subject's facial expression.) "Pick up your cigarette again and take a deep drag at it. The taste of castor oil will grow appreciably . . . your cigarette will

taste strongly of castor oil . . . tell me, now, what you taste."

At this moment the subject is always caught in the struggle between the narcotic and the workings of suggestion. Sometimes it takes a rather long time, sometimes a short time, before I get the answer I want. But it almost always ends as I want it to, somewhat as follows:

Subject: "It's odd. The cigarette tasted very good before, but now it tastes like castor oil. It's pretty awful. It's so awful that I have to throw it away."

I: "No, don't do that. Take a few more puffs. But the taste of castor oil will grow even more pronounced. You are finding the cigarette so abominable that you will never again want to smoke."

I let the subject take a few more puffs, and in almost every case he ends by laying the cigarette aside or even throwing it away.

When I have succeeded with this suggestion, I go on with posthypnotic suggestions, which run somewhat as follows: "Whenever you light a cigarette during the next few days and start to smoke it, you will again have an abominable taste of castor oil in your mouth, just as you have now. Your aversion to smoking will gradually grow stronger and you will have no desire to smoke a cigarette. If some smoker in your company offers you a cigarette you will involuntarily think of the abominable taste of castor oil and decline it. At the same time, you will think of the evil effects of smoking cigarettes. You complained of sleeplessness, nervousness, and similar discomforts. (Of course, I cite the complaints which the subject retailed to me or which I drew out of him in his hypnotic sleep.) *The aversion which you feel for the taste of castor oil, coupled with*

your knowledge of the evil effects of smoking on your system, is enough to cure you of the cigarette habit."

The reader should not believe that posthypnotic suggestions of this sort are immediately effective and work a permanent cure. But they do last for a few weeks, the length of time depending on the subject's personality, and then one or several more hypnotic sittings are enough to *cure him permanently of this bad habit.*

The methods used for breaking the *drinking habit* are similar to those employed in breaking the cigarette habit. It scarcely seems necessary to relate them in detail again. I ask the subject to name some beverage which he dislikes intensely, and then, when he is in a hypnotic sleep, I hand him a glass of wine, brandy, or whisky—whichever drink he is addicted to. Suggestion is used to bring him gradually to identify his favorite drink with the beverage he particularly dislikes. If the alcoholic, for instance, finds soda pop particularly offensive, I persist in suggesting that *his favorite drink tastes like soda pop.* In many cases it is advisable to use the method of short, repeated periods of hypnotic sleep, discussed above. In the interims I offer the subject his favorite drink and observe how he reacts to it. As soon as he refuses his favorite drink, I have proof that the suggestion—at least for the time being—has worked.

But more important and more difficult than the temporary cure thus effected is his obedience to posthypnotic suggestion; that is, the working of a permanent cure. One must proceed more carefully with breaking the drinking habit than with breaking the smoking habit, for sometimes the subject's system cannot accustom itself to the withdrawal of its habitual poison. In these cases it is necessary to study his personality carefully and not attempt any

cure by force, but a gradual tapering off, suited to his physical demands.

I am often asked if it is absolutely necessary to give the subject alcohol while he is in hypnotic sleep. People generally believe I might just as well give him water and suggest he is having his favorite drink. Theoretically this is correct. But practice has shown that it is better to use the actual drink in the sittings. The reason for this is that the association of the drink with the suggestion is stronger in the subject's subconscious mind when it is based on an actual rather than on a suggested drink.

It is evident that we can *extend these examples to the breaking of any undesirable habit*. Biting fingernails, sucking thumbs, and similar unpleasant habits can be cured by hypnosis much more easily and thoroughly than by admonition, scolding or punishment.

CHAPTER XXXVII

REMOVING STAGE FRIGHT BY HYPNOSIS

I SHOULD like to consider the cure of stage fright and fear of the public in rather minute detail. First, because stage fright is comparatively easy to cure by hypnosis, and second, because I consider the ability to speak in public of such importance that I have devoted several chapters of this book to it.

What holds true for speakers or lecturers naturally holds true for singers and other artists who must appear before the public.

The object in this case is to make the performer as assured in a large auditorium as he is in his own room. Hypnosis is the final and most efficacious method for all cases in which the beginner fails in his attempts to combat stage fright and fear of the public.

In my courses in public speaking at Masaryk College in Prague, there was a young woman who was exceptionally intelligent. In small gatherings she was a brilliant conversationalist, especially as a dinner companion, when the talk was quite general. As soon as she stepped on the platform, however, her assurance vanished. She began to shake, was struck dumb, and once even wept hysterically. In other cases of this sort, I often attempt to dispense with the platform and have the subject merely stand beside his chair and speak to a group seated about a table or tell them a little story. But even this method failed in her case, for as

soon as she saw all eyes directed at herself, her mind went blank and words failed her.

I therefore tried hypnosis and the sitting was so dramatic that I should like to set it down verbatim, even though it is rather lengthy.

As soon as she was in hypnotic sleep, I began with my suggestions.

I: "Stretch your arm out and lay your hand on mine. Now you feel your hand getting heavy, so heavy that you cannot remove it. Try to remove your hand!"

Miss M. C. (*after fruitless attempts*): "I cannot."

I: "Now count from 1 to 10." (She does this.) "Now count again; but you cannot count beyond 5."

Miss M. C.: "1, 2, 3, 4, 5." (Her desperate attempt to count further is obvious, but she fails.)

I (*to test whether hallucinations might succeed*): "Now you are sitting in a railroad car. Tell me what you see."

Miss M. C.: "In my section there is a married couple besides myself. The man is wearing a dark brown suit, the woman a gray traveling outfit. They are talking about the town they're going to. Outside I see fields, trees and houses."

I: "You are now passing a station. Notice the name on it. . . . Can you tell me what it is?"

Miss M. C.: "I saw the station and the sign, but we were going so fast I couldn't read the name."

Then I made several similar attempts, which I need not relate at this point, to convince myself that Miss M. C. was open to suggestions and hallucinations. Then I approached the heart of the matter.

I: "Now we are in my public-speaking class at Masaryk College. You are called on to give today's talk. Now you are standing on the platform and are not at all afraid. You

do not feel even slightly perturbed and can speak quite calmly."

Miss M. C.: "No, I am afraid, and I cannot speak." (Up to this point the subject had followed me willingly, but at the first mention of her fear she became resistant.)

I: "You know you only see and hear what I tell you to. Correct?"

Miss M. C.: "Yes."

I: "You may only feel or experience what I tell you."

Miss M. C.: "Yes."

I: "You are standing on the platform and you are not afraid."

Miss M. C.: "I am afraid." (With this, her expression clearly showed fear. Her eyes filled with tears and she began to tremble.)

After this second show of resistance and a few more attempts to remove it I saw that we should get nowhere with this method. I had to find another way. It happened that Miss M. C. had missed a class at the beginning of the session because she had attended an engagement party at which she had had to make a little toast. I decided to let her talk about this, and continued:

I: "Now you are at the engagement party. You are sitting at a table with eight others. They are a happy and gay company."

Miss M. C. starts laughing. She actually looks happy.

I: "You yourself are happy and gay. You are standing at the table and have just proposed a neat little toast for the bridal couple. Everyone applauds because your speech was so good, and you must now clink glasses with everyone."

With this I handed her a glass. Miss M. C. made the

suitable gestures for clinking glasses and then asked with great surprise: "Was my speech really good?"

I emphatically assured her that it was excellent.

When Miss M. C. expressed her delight in word and in expression at the success of her toast, I saw I was on the right road and went on.

I: "We are again in the public-speaking class at Masaryk College. There are about thirty persons there. You are standing on the platform and have just delivered an excellent address. You see everybody applauding. You must bow your thanks. (She bowed, smiling radiantly.) Now you know how well you can speak, and you know, of course, that in the future you can speak just as well."

Miss M. C.: "Do you really think so?"

(I admit I was very happy to hear these words, for the question proved her fright was beginning to disappear.)

I: "Absolutely. You have just made an excellent speech, and have proved to yourself and all of us that you no longer have any feeling of fear. As a matter of fact, I wish you would speak again at our next class meeting. Would you like to?"

Miss M. C.: "If you think I was really good today, I should very much like to."

I: "What opera did you hear last?"

Miss M. C.: "Wagner's *Tannhäuser*."

I: "Do you know enough about the opera and Wagner to give a talk on it?"

Miss M. C.: "Yes."

I: "Good. Give us a talk on it at our next class meeting. You will remember what an excellent talk you just now gave and therefore you will not have the slightest feeling of fear. You are sure of success. Now, what will happen at our next class meeting?"

Miss M. C.: "I shall give a talk on *Tannhäuser* and Wagner. I am not afraid, and I know it will be a success."

After several more repetitions of the same suggestion I terminated her hypnotic sleep. She did not have the slightest idea of what had occurred, and I asked those present not to discuss it with her. The next class meeting was three days later. After several of the students had as usual delivered their talks, each about ten minutes long, I asked Miss M. C. if she would like to talk to us about some opera. She agreed immediately, mounted the platform, and talked about *Tannhäuser* and Wagner for a quarter of an hour in smooth, lucid style. Since the hypnosis and what had occurred during it had been whispered about in the class, and since all the students knew Miss M. C.'s fear of speaking in public from her previous attempts at it, they applauded her vigorously, and this applause was enough to break down any complex that might have remained.

From this time on, she was a frequent speaker, and she has never had a relapse of stage fright.

I have described this single instance in detail in order to show how hypnosis can cure even seemingly incurable cases of stage fright. The reader who suffers from stage fright should first try the methods I outlined in earlier chapters. If these fail, he can try hypnosis as a last resort.

CHAPTER XXXVIII

HYPNOSIS AND MEDICINE

THE importance of hypnosis in relation to medical cases is as greatly underrated as it is in relation to criminal law. In all civilized countries, the treatment of disease with or without hypnosis is quite rightly reserved for physicians. For this reason I do not intend to give any direction for medical treatment employing hypnosis; on the other hand, I should consider this book incomplete if I did not point out what a beneficent aid hypnosis is to the whole field of medicine, especially in childbirth and surgical cases.

Hypnosis is successfully employed for curing a larger variety of diseases than is generally known. Since Forel many years ago, a great number of medical experts have listed the following diseases in which cures have been effected with the help of hypnosis: insomnia, loss of appetite, indigestion, toothache, colds, writers' cramps, nervous disorders (especially those arising from fear), melancholia, depressed states of mind, claustrophobia, and many others.

Nowadays we recognize more readily than we did a few decades ago the great effect suggestion and hypnosis have on diseases of all sorts. Today we know that the subconscious mind influences human organs to a much greater degree than we suspected. Not only Hindu fakirs but Occidentals, too, can accelerate or retard their heartbeats by *concentration*. They can regulate their pulses by sheer will and therefore they serve as the best proof of how the or-

ganic functioning of the body can be regulated by purely psychic currents. The color of the skin, breathing, and blood pressure can be psychically controlled and we know nowadays that the *influence of the subconscious mind* on digestive disturbances, on the formation of gall stones, etc., is considerably more potent than we suspected. The same thing holds true for skin eruptions, for a sudden loss of hair, and the like. For instance, we know a person's hair can turn white within a few hours as a result of sudden fright or shock. We also know disturbances of any sort affect the digestive tracts of most people. It is no wonder that symptoms of a disease which are purely psychic can be removed by psychic means, that is, by hypnosis in particular. But that does not exhaust the uses of hypnosis for medical purposes. The realization of how much hypnosis can lighten the pains of childbirth and ease the effects of operations is becoming more and more general. Every gynecologist who has had experience with hypnosis knows labor pains can be regulated by its use and reduced to a minimum with no ill effects on mother or child.

As far as operations are concerned, everyone knows the dangers and discomforts of anesthetics. There are cases, when the patient has a weak or an abnormal heart, in which anesthetics cannot be used. In all hospitals in which experienced hypnotists are employed, hypnosis has been used in these cases for many years.

One faction in the medical profession favors using hypnosis for all cases, *not to replace an anesthetic but to supplement it*. The advantages of this treatment, as Dr. Friedländer has pointed out in his book, *Hypnose und Hypno-Narkose* (Hypnosis and Hypno-anesthetics), can be summarized as follows:

1. Hypnosis can be used for the preparation of the pa-

tient. We all know that fear of the operation heightened by the dread of anesthesia has a very bad effect on a person's spirit. The surgeon, who usually loses his contact with the patient shortly after the operation, knows much less about these matters than the interne who looks after the patient from then on. He knows that the symptoms and mental attitudes evoked by apprehension are often more difficult to cure than the actual illness which made the operation necessary. These dangers can be reduced to a minimum, if not completely eliminated, by the timely use of hypnosis before the operation. Several hypnotic sittings before the operation itself can effect a general relaxation and calmness, and apprehensions about the ordeal ahead can be removed, as can any other feeling of fear.

2. *During the operation itself*, hypnosis is used along with the anesthetic. The patient, who has been put into hypnotic sleep several times before this, has accustomed himself to hypnosis and the hypnotist and is therefore relatively easy to put to sleep, in spite of the excitement caused by the prospective operation. If the anesthetic is administered during hypnotic sleep, every feeling of fear the patient may have is removed, and it is even possible to reduce the chloroform or ether by one third or one fourth of the usual amount. It is obvious that the after-effects of these anesthetics are likewise reduced.

3. Finally, hypnotic treatments after the operation are of advantage because they keep the patient's body in a quiet, relaxed position without any effort on his or her part. Everyone who is familiar with these things or has himself had an operation knows how important a comfortable position is in aiding the body to repair its damaged part and to heal the stitches. But he also knows how difficult it is for the patient to stay in a comfortable posi-

tion, especially when a fit of vomiting seizes him as an after-effect of the anesthetic. In all these cases, hypnosis keeps the patient in a comfortable position for days or even weeks, with no effort on his part. A hypnotic sleep of long duration, first used by Dr. Wetterstrand, hastens recovery in a way which is otherwise unattainable.

But the advantages derived from hypnosis in medical cases are not confined to its application in childbirth and operations. Several physicians, among them Dr. Kohnstamm, have discovered that *the patient himself can give information*, when he is in a hypnotic state, which may be very helpful to the attending physician. When the patient has been put into hypnotic sleep, these physicians ask a series of questions closely related to those used in psychoanalysis. Freud and Breuer, as I have already pointed out, developed their psychoanalytic methods from a study of hypnosis. I mention an actual case at this point because the case history, or rather the diagnosis, explains the matter better than a theoretical exposition.

Dr. Kohnstamm had a patient who *found it impossible to read a book as she grew older*. As she was a cultured person, she found her condition unendurable, consulted several doctors, and finally Dr. Kohnstamm, who put her into a *deep degree of hypnotic sleep*. He describes this case as follows:

"When she is in a deep degree of hypnotic sleep, I ask: 'Has this symptom a psychic connection? If so, what?'"

"After a minute's thought she answers: 'Twenty years ago I was at a health resort, and one afternoon I went to a point which offered a fine view, from which one could see the hotel. My parents had remained at the hotel—my father was lame. I was reading *Soll und Haben* (Debit and Credit) by Freitag. Suddenly I see fire and smoke issuing

from the hotel. Terribly frightened, I fall headlong. For many years I could not finish that book, and always when I try to read while I am taking care of someone close to me, I get a feeling of fear which has its roots in that occasion'."

After the cause of this feeling had been discovered, or rather, after the patient herself had disclosed it in deep hypnotic sleep, it was relatively easy to remove it. The development of a psychosis of this sort is almost always the same: It first appears in early childhood, is disregarded by inexperienced but well-meaning parents, and the child is simply "talked out of it." The psychosis should be attacked scientifically. If it is not, *it takes root in the subconscious mind*, spreads out, and gradually affects the thoughts in the conscious mind. If the matter is brought into the open by questions put during a deep hypnotic sleep, it is relatively easy for hypnotic suggestions to *remove the root of the psychosis*. Only in this way can we explain why sick persons, who suffer from so-called nervous complaints for years, get no relief in sanitariums, from changes of scene in travel, or through similar sorts of treatment, and yet are *completely cured by a few hypnotic sittings* undertaken with experienced practitioners.

Thus we see that concentration, developed to its most effective intensity, has been enlisted as an ally by medical science in the battle against human ills. We might say that this is the highest achievement of the use of the human mind as we have described it in this book.

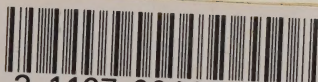
Yet we who read and write about that particular function of the mind we call memory, can see also that using your head is not a special privilege of the scientist. As laymen we have seen in the preceding pages that memory and concentration play a great, almost paramount, role in the lives of every one of us. These two tools of life, which

we can develop to their highest perfection with so little difficulty, are within the reach of us all. And once conquered, we can "use our heads" to achieve a kind of success that we may never have dared even to dream.

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